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THE PAPER TRADE JOURNAL.

"The Consumption of Paper is the Measure of a People's Culture."

VOLUME XXIV.—NO. 42. NEW YORK, OCTOBER 19, 1895. WHOLE NUMBER 1120.

Trade Topics.

Effect of Things Referred to in Written Contracts.

[WRITTEN FOR THE PAPER TRADE JOURNAL.]

As a general rule a written contract must be construed by the provisions contained in it, and not by anything outside of it; but the acts of the parties may be considered in order to ascertain their intentions. To this there are exceptions, as to all rules. It has been uniformly held by courts of equity, and sometimes in cases at law, that where several instruments in writing are made at the same time between the same parties and relating to the same subject matter, they will constitute only one agreement. This is frequently the case in commercial transactions growing out of correspondence and various propositions before a final acceptance is made either by the buyer or the seller.

In construing such matters the court will presume such a priority in the execution of them as will best effect the intention of the parties. Where one of the contracts is full and explicit as to the intent and meaning of the parties, and the other is general, but referring to and adopting the stipulations contained in the former, the courts, in giving a construction to the agreement of the parties, will consider both as forming a single agreement. Upon the same principle, where one writing refers to another, either tacitly or expressly, both are to be construed together, and one may correct an erroneous statement in the other. It has been held that when written instruments have reference to a former contract, and contain recitals of its subject matter, and it appears that there is a variance between such instruments, and between them and the contract, the recitals are to be explained and corrected by the contract to which reference is made.

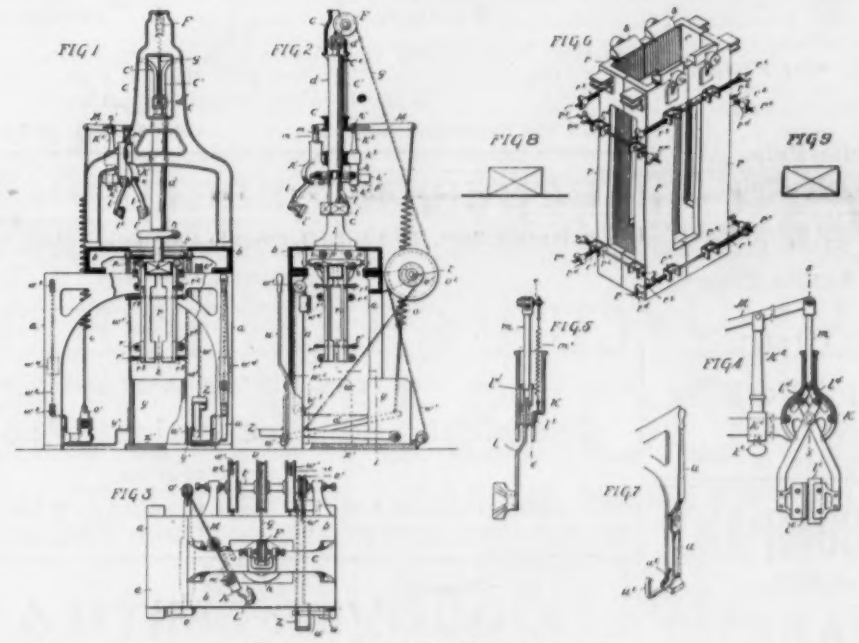
That two writings are contemporaneous and kindred in respect to the subject matter is frequently inferrable from circumstances appearing in the writings themselves, although neither expressly or directly refers to the other, and the whole may be deemed one agreement. A familiar instance is that of a conveyance of lands or chattels, apparently absolute, and a separate contemporaneous agreement respecting a conveyance by a grantee to the grantor, on payment of a sum loaned, &c., when both instruments, if made at the same time, are te be construed together, and may be held to be a mortgage; for a conveyance, although absolute in form, if intended by the parties to be security for the payment of a debt, is both at law and in equity regarded only as a mortgage, and this may be shown either by simultaneous agreement or by the acts or parol declarations of the parties.

In actions on promissory notes, writings connected with them by direct reference or necessary implication are admissible by way of showing that such note or notes were conditional, and while a note is a negotiable instrument, yet, when by its terms or anything therein contained it departs from the ordinary form of commercial paper, the indorsee takes it subject to whatever equities may be shown between the original parties, evidenced by the conditional language in the note itself.

An eminent writer says: "It is no doubt true that the interpretation of deeds and contracts formally prepared and purporting to be a full and final expression of the meaning of the parties must be drawn from the four corners of the instrument without looking outside of it, or qualifying its language by that of contemporaneous or subsequent documents; but the case is obviously different when writings are on their face fragmentary and imperfect, and appear to be memoranda or recitals of parts of a contract or transaction, rather than a full and authentic record of the whole. Whenever, therefore, the agreements lie scattered in a variety of documents, they should all be consulted, and each should be read with the aid of the light afforded by the others."

For instance, it is not requisite, under the statute of frauds, that the contract promising to pay the debt of another shall be formally expressed or reduced to writing. All that the statute requires is written evidence of the contract, and when the consideration for the guaranty of a written contract appears in the contract this requisition is as much satisfied as if it had appeared or been set forth in the guaranty. A guaranty written and delivered at the same time with the contract guaranteed may be for some purposes a different thing from the contract, but is so far the same that both must necessarily be examined in order to ascertain the nature and extent of the obligation imposed by the guaranty, and although it may be true that the guaranty is no part of the contract it is at least equally true that the contract is part of the guaranty.

It was held in New York that instruments executed at the same time and in the course of the same transaction could not be read together and interpreted as one unless they were strictly between the same parties. This is too rigid a limitation unless confined to those instances where the instruments in question have no necessary connection, for when they do, and it is impossible to construe or enforce stipulations in either without looking to those of the other for aid or explanation, both are substantially one, and should be treated as such in any suit or proceeding in which they may be drawn in question.



IMPROVED PAPER BOX MAKING MACHINE.

Box Making Machine.

An illustration is given of a new and improved machine to be employed in the manufacture of paper boxes, Figure 1 being a front elevation partially in section on the line 1 1, Fig. 2, of the machine; Fig. 2 is a transverse section of the same on the line 2 2, Fig. 1; Fig. 3 a plan view of the same; Fig. 4 a sectional elevation on the line 4 4, Fig. 5, of the strip cutting device; Fig. 5 a sectional elevation of the same on the line 5 5, Fig. 4; Fig. 6 a detached perspective view of the guide box into which the formed boxes are forced; Fig. 7 a perspective view of a detail of construction, and Figs. 8 and 9 show the application of a scored or grooved blank to a former.

The various working parts of the machine are supported upon a suitable framework, *a b c*, the upper portion *c* of which is provided with suitable bearings for the reception of a shaft, *d*, connected at its upper end by a swiveled shackle, *d'*, to a chain, *g*, passing over a guiding roller, F, and having its opposite end secured to and adapted to be wound upon a winding drum, *v*. Near its lower end the shaft *d* is provided with a handle, *h*, and at its lower end is secured a frame or former, *i*, the latter being secured to the shaft *d* and capable of being readily removed for the substitution of a former or frame of different size, according to the size or contour of the boxes to be manufactured.

The boxes which are to be manufactured are made from blanks previously cut and shaped to the desired size, and the machine is designed to hold the blank when bent up into the form of a box by means of a strip of pasted paper either on the inside or upon the outside of the box, and when it is desired to employ an inner lining piece for holding the sides and ends of the box in position paper is fed to the former with its pasted side outward, and while its end is held in position against the former the latter is turned by means of the operating wheel *h*, so that the band or strip entirely envelops it. After thus covering the former with the strip, that section of the latter to be employed is severed from the remainder by means of a separate cutting device, K, and the blank *x* is placed in the position shown in Fig. 8, and its sides and end portions are turned up so as to come into contact with the pasted strip in the manner shown in Fig. 9.

So far as this operation is concerned the box is practically complete, and it only remains to be delivered from the former and dried, or it may be desired to cover the outside with a strip of similar material. In such case, or where it is desired to employ simply an outer covering for the blank, the former employed may be an ordinary block. In the operation of the machine when arranged for this purpose the previously prepared blank is first held to the bottom of the former. One of the sides of the cardboard is turned up against the former and the strip is pasted against it. Then the wheel *h* is turned with one hand, while the other acts to turn up the three remaining sides of the blank, one after another, and then the pasted strip is drawn gradually around the box and cut off by the shears K. The holding device is then pushed aside and the formed box is discharged in the manner hereinafter described.

The frame *b* serves to carry four rolls, *p*, so disposed as to bear upon the four sides of the box as the latter is forced down between them by the former *i*, and acts to firmly press the strip of sheets of cardboard upon the paste covered strip and more firmly unite the two.

The lower portion *a* of the supporting frame serves to support a series of vertically arranged angular strips, *r*, which, when placed in position, form a vertical guide box of a shape corresponding to that of the box being manufactured. The various strips *r* are held together by transverse guiding bolts, *r'*, extending through lugs, *r³*, on the various strips, and between the heads of the bolts and the lugs *r³* are coiled springs, *r⁵*, normally tending to force the strips toward each other and press the pieces of cardboard upon the strip of pasted paper, the tension of the spring being adjusted by screws, *r⁴*. The central portion of each of the sides of the box or guide is open to permit the free circulation of air to assist in drying the paste, and at their upper edges are spring-held fingers, *s*, having upper beveled edges, which, as the former, *i*, is depressed, are forced outwardly by the lower edge of the former, and after the upper edges of the box have passed below the fingers the latter are again moved in by their springs, and act as strippers to remove the formed box from the former *i*. The box or guide is of sufficient length to contain a number of boxes, so that between its entrance to the guide and its final discharge sufficient time will have elapsed to permit the thorough drying of the paste. Adapted to a guiding platform, *x'*, at the base of the machine is a delivery box, *y*, from the opposite side of which extend arms, *y'*, secured at their outer ends to chains, w^2, passing over guiding pulleys, w^3, and carrying at their free ends counterbalance weights, w^4, which normally tend to retain the delivery box in position immediately beneath the discharge mouth of the guide *r*. The rear end of the delivery box is secured to chains, *w'*, which extend to drums, v^2, secured to the shaft *t*, and passing partly around the drums in the same direction as that in which the chain *g* passes around the drum *v*. The shaft *t* is also provided with a drum, *v'*, from which extends a chain, *w*, to a pedal, Z, so arranged with respect to the various drums *v* v^2 that on the depression of the pedal the shaft and all of its drums will be revolved, causing the chain *g* to be partially wound upon its drum, *v'*, and raising the shaft *d* and the former *i* to the position illustrated in Fig. 2, while the chains *w* are also partially wound upon their drums, v^3, and the delivery box *y* is moved from its normal position beneath the guide *r*, as shown by dotted lines in Fig. 2, a slight distance to the rear, as shown by full lines in that figure, and delivering one or more of the formed boxes.

Upon the release of this pedal the counterbalance weights w^4, acting upon the chains w^2, will again draw the delivery box back to its normal position, and the weight of the former *i* and its shaft, *d*, will cause the latter to descend and force the completed box between the squeezing rollers *p* and into the guide *r*. The proper position of the former *i* with respect to the squeezing rollers and the guide is determined by the guiding plates *c'*, carried at the upper portion of the frame *c*, and to which is adapted a guiding pin, c^3, which, during the turning of the shaft and former, is normally above the mouth of such guides, the latter being gradually inclined toward each other, so that the pin c^3 will be caught by the guides as the shaft *d* descends, and before the entrance of the former *i* between the pressing rolls the shaft will have been turned axially until the former assumes the proper position.

During the turning of the former and the placing of the plank against the paste-covered strip of paper or the covering of a blank by a pasted strip the former may be held up in the position shown in Fig. 2 by means of a locking catch, *u'*, adapted to extend over the treadle Z, and under the control of an operating lever, *u*, the catch being preferably acted upon by a spring, u^3, as shown in Fig. 7, so that it will automatically engage with the treadle each time the latter is depressed.

The mechanism for severing from the pasted strip a section of sufficient length for the completion of the box is more clearly illustrated in Figs. 4 and 5. This mechanism comprises a frame, *k*, from which projects an arm, *k'*, adjustably secured by a screw, k^2, in a box, K', depending from a stanchion, K^2, which latter is adapted to an orifice in a lug, k^3, projecting from the frame *c*, the adjustment of the frame *k* being for the purpose of enabling the operator to adjust the position of the cutting knives in accordance with the size and character of the box being manufactured.

Pivoted centrally at l^3, within the frame or casing *k*, are two arms, *l*, one of which carries a cutting knife, l^2, and to the opposite arm is secured a block, l^3, of wood, lead or the like, so arranged as to form a cutting base for the knife l^2. The upper ends of the levers, *l*, which project beyond the pivot point, are connected by links, l^4, to a rod or spindle, *m*, guided within the upper portion of the frame *k*, and connected at its upper end to a lever, M, pivoted at *n'* to the stanchion K^2, and connected at its extreme outer end to a treadle, *o'*, through the medium of a connecting rod, *o*, having a yielding or spring-like central section which will yield when the cutting edge of the blade l^2 is tightly pressed against the block l^3, and thus avoid injury to the blade. In order to normally keep the arms *l* apart in readiness for action, a tension spring, *m'*, is located within an offset in frame *k* and is connected at one end to the frame and at the opposite end to the lever M, so as to normally depress the rod or spindle *m* and keep the arms *l* apart.

From Apprentice to Superintendent.

[WRITTEN FOR THE PAPER TRADE JOURNAL.]

BY B. F. FELLS.

I entered the mill one morning, and was told that I had been promoted to second hand. As second hand of a large mill I had abundant opportunities to familiarize myself with all of the practical methods of operating machinery in the most advantageous manner, and with increased opportunities to learn. One important point I observed about this time was that the more a machine is kept running the more even the product. Machinery gets clogged and stiff even if standing only a short time; belts and gears run harder on damp days. No machine goes so steadily and easily as that which is kept running constantly. A second hand has much to do with the setting up and starting of new machinery. A substantial foundation having been provided for the new machine, the next matter of importance is to level it. This is done by resting a spirit level on the top of a shaft, and using that as a guide.

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at any point. It is well to oil the bearings at this time. Then put on the driving belt, with the smooth side next to the pulleys, and apply the customary quantity of oil to its surface, for the purpose of rendering it pliable and more durable. If the machine is new there will not be much trouble in getting it level; if second hand, the journals will need looking to, and if these are worn babbitt them, pouring both box and cap at the same time. The hot metal expands the side of the bearing next to the box, and this should be guarded against. In cold weather, heat the boxes; also heat the journal upon which the box is babbitted. If the journal is used for a babbitting arbor put one or two thicknesses of paper around it before making up the box to be poured.

A question which is being considered now is the use of electricity for driving some of the light machinery in the paper mill. The cost of installing the system is one of the chief objections. Most mills are built to accommodate heavy shafting and belting, and these require stronger floors and ceilings than are necessary for the electric system of driving. As the motors can be scattered about there is a decided saving compared with the small engine system. There is undoubtedly a gain in product where small machines are run by electricity, owing to the promptness with which the machine can be started and stopped. Another thing is that the electrical driven machine can be moved about in less time, as belt and other adjustments are of less importance. It will be some years yet, however, before electricity takes the place of steam and water power to any great extent in this connection, and until it does the best way is to get the best possible results from the boiler or the water wheel.

The apprentice can learn something every day. New machines and new processes are appearing at every turn. More or less chemical knowledge may be required. It does not follow that every superintendent of a paper mill should be able to successfully conduct a chemical analysis, although the skill necessary to make a qualitative analysis ought to be acquired by any "super" of ordinary intelligence in a few months with the aid of some lessons in handling the apparatus. The knowledge of chemistry most needed can be acquired with a little effort and without any special instruction or apparatus. The finisher of the paper should know just what ingredients are used in the sizing, which enters largely into the successful finishing of the goods, and the apprentice should master this. A variety of colors is used, and knowledge is required to determine what will best keep the colors intact all through the finishing processes and bring out certain tints of uniform brilliancy.

The effect of sizing on certain classes of paper makes it necessary to watch that part of the work with the closest attention, for in this process the foundation may be laid for a great deal of damage or imperfection. If you want to get uniformly finished paper, try as much as possible to use a uniform amount of size, keep the temperature of the size at a given standard, and apply it evenly and regularly in every case. Some very good colors are marred at times by the bad handling of the size.

(To be continued.)

Correspondence.

FOX RIVER VALLEY.

[FROM OUR REGULAR CORRESPONDENT.]

APPLETON, Wis., October 15, 1895.

An entirely new and very unexpected turn was taken last Saturday in water power matters in this valley by the arrest, under United States authority, of representatives of the paper companies and other companies drawing water from the Government canal at Kaukauna. The warrants were forwarded from United States District Attorney Wigman at Green Bay to United States Marshal Pratt at Milwaukee on Friday night, and the arrests were made the following morning. The firms affected were the Western Paper Bag Company, the Thilmany Paper and Pulp Mills, the Kaukauna Electric Light Company, the Kaukauna Lumber Manufacturing Company and the Russell Brothers flouring mill. The paper men arrested were Oscar Thilmany, representing the Thilmany Company, and W. W. Ormsby, representing the Western Paper Bag Company. Frank T. Russell, the Neenah paper manufacturer, was also arrested as representing the Russell Brothers flouring mill. The men appeared before United States Court Commissioner Kellogg in this city, and their cases were continued separately to dates ranging between October 29 and November 3.

The warrants were issued on complaint of District Attorney Wigman by direction of the Secretary of War, through George A. Zinn, of the United States Engineers, of Milwaukee. The charge against the manufacturers is that on specified dates between September 1 and September 29 they drew water from the Government canal at Kaukauna, upon which their mills are situated, in excess of the amount allowed by the Government order, thereby lowering the level of said canal below the point required for navigation. The case against the manufacturers rests upon the testimony of the lock tender and watchman at Kaukauna. The defendants interposed a general denial of the charges. It is further charged that not only now but for years past the defendants have violated the law and interfered with navigation in the way stated, and have refused to shut down and stop drawing water when notified to do so by the lock tender.

One of the defendants told your correspondent that the trouble comes from the fact that the water gauge which the Kaukauna lock tender goes by is situated at the lock, and many times when the lock tender claimed that the water was too low and the manufacturers would have to shut down, the manufacturer personally went up to the dam and found the water going over it as required by law. It may be possible that the drawing of water through the canal lowers the level at the lock more than at the dam The Government's orders specify that the level of water at the dam shall be the regulating point, and this the Kaukauna manufacturers claim that they have not infringed, Whatever the merits of the case may be, there has been considerable complaint in the past by the steamboat men of their difficulty in getting through the canal at Kaukauna during times of low water, and the outcome of the cases will be watched with great interest by everybody concerned.

A project has just matured for the establishment in Appleton of a plant for the manufacture of the wire cloth which is used by the paper manufacturers, and it is expected that the new establishment will be in operation by early next spring. The company is composed entirely of Eastern men, the head of it being at present interested in a similar factory at Springfield, Mass. A site for the factory has been purchased in this city, and a contract has been given for five looms for making the cloth. The site was purchased by William Buchanan, and a suitable building is now being provided for. The first loom is to be delivered on March 1, and the remaining looms will be sent forward at intervals of about a month, so that the plant may be expected to be ready to run early in the spring. The number of men employed will at first be about twenty-five, all skilled workmen. It would seem that there is a very good opening in this valley for such an enterprise, as all wire work has to be sent for to the East.

The new boiler and engine house now building for the Fox River Paper Company, in this city, is completed, with the exception of numerous patent skylights which are to go into the roof, and which have not yet arrived. The work of setting the new boilers has been completed and the foundations for the engine are now being put in. The engine itself is not yet here, but will arrive by the time things are ready for it.

The great engine for the Shattuck & Babcock Company's mill at De Pere was shipped last week from the E. P. Allis people's factory at Milwaukee. With steam at 100 pounds this engine is expected to develop 1,000 horse power, and by increasing the pressure 1,400 horse power may be secured from it. The new boiler and engine house are done, and the boilers are ready to go into operation.

Architect C. B. Pride, of this city, is authority for the statement that the Wolf River Paper and Fibre Company, of Shawano, will probably next year put in a sulphite fibre plant in connection with its present ground wood plant. The improvement is contemplated to be made in the early spring. During the past week or two Mr. Pride has been making the preliminary surveys for two new water powers in upper Michigan, one at Iron Mountain and the other at Republic. The first named is at the instance of an Appleton man, J. R. Wood, who is the owner. The place is located on the Pine River, and is said to be a very promising location for a power. At present Mr. Pride is at Quinnesec Falls looking after the new mill which is in course of construction there.

The local papers at Wausau, on the Wisconsin River, have been speculating about the meaning of a certain visit paid there by ex-United States Senator P. Sawyer, of Oshkosh; Moses Hooper, of Oshkosh, and G. A. Whiting, the paper manufacturer, of Menasha, all of whom are known to be interested in water power and manufacturing matters, and rumor has it there that a new water power is on the table for the Wisconsin River district.

The Hoberg toilet paper mill which was removed from Kaukauna to Green Bay, has gone into operation in its new quarters, all of the moving having been completed last week.

The common council of this city at its last meeting made arrangements for locating a new branch of the fire department, with hose house and apparatus in the fourth ward, which is the part of the city on the south side of the river where in the past there has been no hose house. Many of the principal mills are contiguous to this part of the town and the added protection will be very acceptable to the manufacturers.

The Wisconsin River Paper and Pulp Company has let a contract for equipping its new mill on the Wisconsin River with electric bells.

Will Rork, for a considerable time in charge of the mill of the Western Paper Bag Company, at Kaukauna, has been transferred to the mill at Batavia, Ill., operated by the same company.

Col. H. A. Frambach, of Kaukauna, is spending most of his time at Quinnesec Falls, superintending the construction of the new mill going up there. The colonel is embodying many new ideas, the fruit of experience, in the growing plant.

FOX RIVER.

MIAMI VALLEY.

[FROM OUR REGULAR CORRESPONDENT.]

DAYTON, Ohio, October 17, 1895.

The past week has duplicated the conditions of the preceding one, while the latter was identical, from an historically commercial standpoint, with a yet more previous weekling. Inasmuch as there is no perceptible change in trade during the current week, the history of a month is thus more than prosily recited.

Of course there are variations in all branches of the paper business, but the bulk of the trade, forming the majority, have found no especially new developments. "The fall trade is here, and apparently here to stay," is about as much satisfaction

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NEWS PAPER AND WOOD PULP.

CHAS. D. BROWN & CO. 154, 156 & 158 Congress St., BOSTON, MASS.
FOREIGN AND DOMESTIC PULPS AND FIBRES. PAPER MAKERS' CHEMICALS AND MILL SUPPLIES.

WATER POWER IMPROVEMENT.
Estimates on Construction.
Contracts Taken and Mills
Built on Short Notice.
MILL ARCHITECT.
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Modern Improved Plans
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PAPER MILLS,
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—ALL TESTS SODA ASH AND ALKALI.—
Sole Agents for the United States and Canada of THE UNITED ALKALI CO., Ltd., of Great Britain,
FOR THE SALE OF THEIR VARIOUS BRANDS OF BLEACHING POWDER.

So frequently we are asked just what our chief business is that we take this opportunity to briefly say:

We sell Westinghouse Engines—Compound, Standard and Junior.
We sell Dynamos and Engines direct connected.
We manufacture and sell the Roney Mechanical Stoker.
We design and furnish Mechanical Draft Plants.
We manufacture and sell Steam Separators.
We design and furnish Steam Loop Systems.
We manufacture and sell Ammonia Compressors and Condensers.
We manufacture and sell Steel Ammonia Fittings.
We design and furnish complete Refrigerating Plants.
We design and furnish complete Ice Making Plants.
We control exclusively the Dry Plate and Block Systems of Ice Making.

But in addition to manufacturing, designing and selling all these things, our chief work lies in executing Contracts which more or less contain them.

We make a specialty of complete Power Plants for manufacturing and electrical purposes, and adapting power to the peculiar needs of various industries, to produce the results they require for commercial success.

We consider such plants not as ends in themselves, but means to ends. We build for results, not to create monuments.

Our Engineering advice is always freely open to those who need what we can do.

WESTINGHOUSE, CHURCH, KERR & CO., ENGINEERS.

NEW YORK: 26 Cortlandt Street. | BOSTON: 53 State Street. | PITTSBURGH: Westinghouse Building. | CHICAGO: 171 La Salle Street.

as you can elicit from a hardworking manufacturer.

Although the impression is left that the trade has drifted in the same monotonous way for a month or so, it should be borne in mind also that the fall trade was just as neatly inaugurated in the Miami Valley as in any other known paper producing section.

There is a report of a materially definite sort that Dayton's industries will shortly receive an addition of note, and that the same will appear in the establishment of an immense paper bag concern. It is not an easy matter to verify the rumor, owing to the chaotic condition of plans, although a week or so may suffice to bring forth the desired information.

However, it is understood that a party of Cincinnati capitalists, with a mixture—and a generous one—of Dayton money and brains, will push the enterprise to a rapid completion, and that by January 1, another bag manufactory will have been ushered in with the new year. There is a whisper that W. M. Kinnard, more familiarly known in the trade as "Billy," is promoting the concern, and will be the general manager, as well as a deeply interested financial factor. Mr. Kinnard is the present secretary and treasurer of the Carter-Crume Company's Dayton branch, and is a recognized hustler. He was formerly with the Troup Manufacturing Company as an executive head.

If reports are to be relied upon a four story structure on Ice avenue, anciently known as Spratt street, will be occupied, although it is even stated that the new corporation will construct a larger building. As it is the intention to manufacture all sizes of grocers' bags as well as the self opening or the improved, in addition to flour sacks, a complete equipment of seventeen or eighteen machines will be an absolute necessity.

Dayton already has several representative bag houses and manufactories, and the prospective or promised concern will be a material supplement.

I notice that the attention of the board of health of Lima has been directed to the condition of the Ottawa River, which receives the refuse of the American Straw Board Company's mills at that point. The health board considered the complaints of 500 residents and finally decided that the company was committing a nuisance. An order that the same be abated within ten days was issued, and within a few days the company must necessarily devise other means for the disposition of the refuse—possibly.

It is safe to say "possibly," because the mayor of Lima thinks that the strawboard company is capable of caring for itself. In addition to that weighty opinion comes that of the health officer, who considers the sewage of the city to be far more detrimental than the refuse of the mill.

It is possible that this difference of opinion will exist for years to come, and if it continues its confusion of the minds of public jurors the paper mill officials need expect little inconvenience from the all-prevalent nuisance, outside of attorney's fees.

This reminds me that the American Straw Board Company, of this city, encountered some difficulty for a while, property owners of North Dayton submitting complaints to the local authorities. The ceaseless "kicking" wrought one reform in the demolition of a dam above the paper mills on Mad River. While there are reports that the American Straw Board Company will eventually be compelled to lay an extension of pipes or dig an additional sewer which will follow the river to a point west of the water works pumping station, there is no possibility of an immediate and compulsory enforcement of such an order. The mills are located near the pumping station, and during low water conditions, when it seemed that the supply for drinking purposes must necessarily be reinforced from Mad River, the refuse question received a rigorous ventilation.

There are several cases hanging fire in this neighborhood. The Hagar Straw Paper Company, of Cedarville, recently made arrangements to care for all refuse which was thrown into a neighboring creek. This it did by constructing two large reservoirs. The improvement cost several thousand dollars, but probably not any more than a lawsuit would have involved.

At Greenfield, Ind., the Weston Paper Company, controlled by Dayton capitalists, erected immense reservoirs, preferring to do so before the complaints became general. A paper concern at Delaware escaped through a technicality. In short the refuse subject is a much pounded issue in this neighborhood.

As told in my last letter the First National Bank, of Franklin, opened its doors for the resumption of business last week. However, actual business did not begin until Saturday. The institution is under the supervision of new officers in the persons of Dr. R. P. Evans, president; Joe M. Oglesby, cashier, and Wm. F. Schenck, assistant cashier. The paper mill men have retired. Franklin is sorely in need of a bank, and the straightening of affairs is a matter of general gratification among the manufacturers, who deposited many thousands on the first day of the reopening.

Raymond Eyre, an employee of the Champion Coated Paper Company at Hamilton, lost two fingers in the supercalenders this week.

Dan Daub, an ex-Carrollton paper maker, who twirled the leather in the box for the Brooklyns this season, called upon his old acquaintances this week. Dan was an amateur with the paper mill team a few years ago.

Trustee Boyd, of the Louis Snider's Sons Company, has been ordered to sell a tract of land, comprising 97 acres in St. Clair township, at private sale. The real estate has been appraised at $4,500.

W. A. Mays, of the Miamisburg Paper Company, who was nominated at the senatorial convention last week, and who announced his intention to "keep out of politics though the heavens fall," showed his determination this week by withdrawing, or more properly, by refusing to accept the proffered honor. Mr. Mays is generally respected, and would have made a gallant fight in this historic district.

The suit of Mary R. Morrill, of Cleveland, which was filed last Friday against Newton Taylor, president of the Cleveland Paper Company, one of the largest concerns in the State, has caused considerable talk in local trade circles. It is the impression of some Daytonians that Mr. Taylor has devoted a vast amount of energy to pushing the company's affairs, although they are not informed as to the merits or demerits of the legal petition.

The plaintiff alleges mismanagement in the affairs of the company on the part of Mr. Taylor, and demands an immediate accounting. The petitioner, Mrs. Morrill, is one of the heaviest stockholders, and claims that by the faults of President Taylor the company has lost $200,000 during the past twenty years.

M. V.

HOLYOKE.

[FROM OUR REGULAR CORRESPONDENT.]

HOLYOKE, Mass., October 17, 1895.

This has been a quiet week with the trade. The movement of paper has not increased to any marked degree; neither has the call for finished goods decreased to any extent.

There is a steady demand for most-kinds of paper in small lots, and the orders are sufficient in number to keep the machines moderately busy.

Some mills are, of course, better supplied than others, but any one of them would be only too glad to receive more. The mills do not seem to be manufacturing very far ahead of present needs.

The stock market does not show much activity. The demand for both foreign and domestic rags is yet spasmodic and the sales are largely confined to small lots.

The recent rainfall has increased the water supply, and a steady stream is now pouring over the dam for the first time in a number of weeks.

The first movement toward opening the Connecticut River to navigation from Holyoke to the Sound was made on Saturday afternoon of last week, when H. M. Farrs' steam yacht Secret took a party of interested persons, including Congressman Gillette, Elisha Morgan, C. H. Parsons, F. A. Nickerson and H. M. Farr, down the river on a tour of inspection.

Soundings were made frequently between this city and Thompsonville, Conn., and in the opinion of the men on board of the yacht the river is deep enough on the average to float large steamers. Mr. Farr is familiar with the river, and has frequently taken the soundings when the water has been low, and has never found less than 10 feet of water in the channel.

The latest proposition is to construct a canal around the rapids between Thompsonville and Windsor Locks on the east side of the river. It would be about 8 miles long, about 35 or 40 feet wide, and could be made deep enough to float the largest Sound steamer if necessary. The walls would be formed of solid stone masonry and one large lock would be used.

It has been estimated that the reduction in freight rates in this city and Springfield would amount to $750,000 per annum. The Chicopee manufacturers are very much interested in this scheme, and are ready to assist in putting it through. The board of trade of that town stands ready to cooperate in hastening the time when the river will be navigable for all sorts of craft.

It is not very often that any stock of the Parsons Paper Company is offered for sale, but now and then a small quantity gets into the market to settle an estate. A case of this kind happened on Saturday, when half a share was sold at auction to Architect G. P. B. Alderman, of this city, for $11,025.

There are only sixty of these shares in existence, the par value being $1,000 each, but the company has a surplus of $750,000. The stock is very valuable and is much sought, but it is very seldom that any is offered for sale, as it nets 12 per cent. in dividends annually.

The Holyoke Water Power Company held its annual meeting yesterday afternoon and these officers were chosen: President, Gideon Wells; agent and treasurer, E. S. Waters; directors, Gideon Wells, J. B. Stebbins, J. J. Goodwin, Francis Goodwin, J. W. Wheelwright, C. M. Beach, J. L. Houston and H. D. Hyde.

F. A. Rivers has been awarded the contract to build the new mill for the American Pad and Paper Company, which will be located on Appleton street. The building will be 120x60 feet, four stories high, with basement. The plans were drawn by Architect Alderman and will be substantial, with all the modern conveniences for carrying on such business.

Eugene Shaughnessy has resigned his position as foreman of the National Blank Book Company's ruling department and will go to New York.

The widow of the late George R. Dickinson has had a handsome marble monument placed on the grave of her late husband in the cemetery at Springfield.

Ex-Alderman Joseph Prescott, formerly connected with the Parsons Paper Company, will leave for Australia the latter part of the month.

The wedding of Walter H. Draper and Harriet E., daughter of J. C. Newton, of this city, took place at Wilmington, Vt., yesterday. Many Holyoke people attended. E. T. Bridges, of South Deerfield, and Edith C., daughter of Architect E. A. Ellsworth, were also married in this city yesterday. The young couple will reside at South Deerfield.

Fred H. Newton, of Ophir, formerly of this city, has been visiting relatives and friends in Holyoke.

H.

BOSTON.

[FROM OUR REGULAR CORRESPONDENT.]

EASTERN OFFICE PAPER TRADE JOURNAL, 67 Federal Street, BOSTON, October 17, 1895.

The long looked for rain storm came in good shape last Saturday, and it lasted until Monday morning.

It was an old-fashioned deluge, the like of which Boston had not experienced for many years. The rain came down in torrents, 5.22 inches of water falling upon the just and the unjust during the thirty-six hours of the storm.

As a result of that rain the paper manufacturers of Massachusetts are well supplied with water. The storm covered the whole of New England, although the rainfall was not so copious as in this State. Only an inch of water is reported to have fallen in Maine.

Locally the paper business has not yet reached that volume which was expected about this time of the year. Trade with city jobbers is reported "only fair," and the statement when made seems to carry a feeling of disappointment. The filling of good sized orders by jobbers is not very frequent, the movement of paper from dealers' hands being in small lots. It is reported also that the demand runs more to low grade papers, which give little profit.

Concerning the paper stock market conditions have not been favorable to large transactions for some time. While the demand has improved a little of late prices in foreign markets on many grades of paper stock are above buyers' views, and this prevents many sales. When the demand becomes more pronounced these diversified views will become adjusted.

Jonathan Lucas, manager of the Riverside Manufacturing Company, of Charleston, S. C., is visiting friends of the Boston trade this week.

E. H. Williams, representing the Westminster Paper Company, of Bellows Falls, Vt., was seen in town to-day, en route for New York. He reports a very good business, all that the mill can do, but keeps taking orders, so that the mill can be kept busy.

J. A. Kimberly, president of the Kimberly & Clark Company, Appleton, Wis., was here this week.

Other trade representatives reported in town were Frank P. Carpenter and W. S. Holt, of Manchester, N. H.; John Mitchell, of Groveton, N. H.; N. M. Jones, of Lincoln, Me.; A. B. Daniels, of Adams, Mass.; Mr. Chamberlain, of Dalton, Mass.; T. A. Mole, of Fairfield, Mass.; Charles S. Mayo, of Lawrence, Mass.; George K. Baird, of Lee, Mass.; Mr. Williams and Charles S. Barton, of Worcester, Mass.; Mr. Raybold, of Mittineaque, Mass.; Hon. Henry S. Dickinson and Geo. M. Castle, of Springfield, Mass.; A. W. Esleeck, Mr. Judd, Samuel Rust, Mr. Caldwell, of Holyoke, Mass.; T. E. Barnes, of Plantsville, Conn.; J. L. Chalmers, of Camden, N. J.; Mr. Carter, of Wanaque, N. J.; I. C. Blandy, of Schuylerville, N. Y., and Mr. Camp, of New York.

G. M. Mansfield, with Train, Smith & Co., left the city on Tuesday for Europe, sailing from New York on the Majestic. Mr. Mansfield will be absent some four or five weeks.

The exports of paper and books from Boston for the week ended October 11 were valued as follows: Books, $3,550; paper, $8,478.

James J. Lowden, whose patented paper mill specialties are so favorably known to manufacturers, reports orders just closed for his combined exhaust and live steam regulators; one for the machine of the Bangor Pulp and Paper Company, Orono, Me., this being the second order from the company, and a regulator for the Worthy Paper Company at Mittineaque, Mass.

Charles Wilson, once located in this city, but of recent years a resident of the far West, has occasion now and then to communicate with his old Boston friends, so that he has not been forgotten. Not long ago Mr. Wilson wrote to your correspondent informing him of his association with W. A. Ross, under the firm name of Ross, Wilson & Co., to act as selling agents at Chicago for the Campbell & Zell Company, builder of water tube boilers, and for the Standard Scale and Supply Company. The new firm of Ross, Wilson & Co. will certainly receive the favors of the trade, and the Boston friends of Mr. Wilson wish him every possible success.

The New York sportsmen who were so royally entertained by J. Fred Webster in the woods of Maine reached Boston last Saturday night about 9:25 on their way home, and during a couple of hours' stay waiting for train connections they were entertained by Col. Train at the Union Club.

DELESDERNIER.

PHILADELPHIA.

[FROM OUR REGULAR CORRESPONDENT.]

PHILADELPHIA, Pa., October 16, 1895.

Friendly rivalry in the manufacture and sale of this world's goods is conducive to good results. The markets outside of the walls of the ancient cities of the Old World picture to us the interest and competition which existed in former days, and we have to presume that the same spirit was then shown as is seen now among purveyors and consumers of the necessaries of life.

A pessimistic feeling does not now exist in the paper trade. On the contrary, confidence in a continued good fall and winter business is very general. All good things come to him who waits, and therefore this is now not only the proper season of the year, but it is due to trade in general that its revival should be at hand and "stand by" for healthful recuperation.

The house building season opens the market again for building paper. C. S. Garrett & Son make this grade of paper, and report their mills running to greatest capacity.

Williams & Co., also Wolf Brothers, find a large demand for their stocks of envelopes, increased by the preparation for holiday business, the latter finding it necessary to run at night for the past month to keep even with the trade.

J. B. Mitchell, R. S. Elliott and W. P. Street, all of A. G. Elliott & Co., have just returned from their annual outing, having enjoyed a trip on their wheels. There were a number of other gentlemen in the party and great sport was had. They traveled from 50 to 65 miles per day, covering quite a circuitous route, consuming in all about ten days' time. Of course stops were made each night at comfortable hostelries.

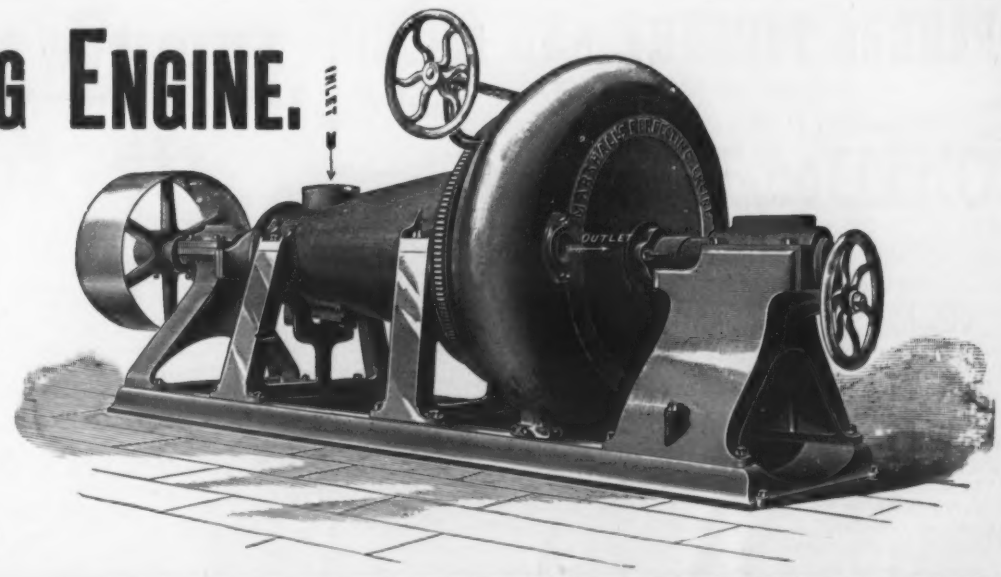
The several mills of the Jessup & Moore Paper Company have occupation sufficient—that is to say, are each industriously occupied. J. H. Sharp, of that company, kindly stopped short the dialogue which he daily carries on with his phonograph, when I called, and stated that if it were not for some fractions he had just dictated to his talking machine, he would allow me to recite a poem into it. It is very accommodating to him, facilitating his correspondence a great deal. H. J. Fitzmaurice, who for several years has been working conjointly with the phonograph for Mr. Sharp, was so good as to place a music cylinder on the machine for my delectation, while I listened to the strains of the "Tancredi" overture—at least that is what he said it was. I may have seemed a little unsophisticated, but I appreciated their kindness, and know that

THE PUSEY & JONES COMPANY,
—Builders of—
WILMINGTON, DELAWARE.
PULP & PAPER MACHINERY
— Sole agents for the SALOMON-BRÜNCCER SULPHITE PATENTS.
WELDED DIGESTERS furnished only by THE PUSEY & JONES COMPANY, —
— CORRESPONDENCE SOLICITED — — WILMINGTON, DELAWARE.—

MARSHALL'S PATENT PERFECTING ENGINE.

USED ON ALL CLASSES OF STOCK
AND EVERY QUALITY OF PAPER.

This Engine will produce a **better finished, stronger** and **more even** sheet of paper from the same materials than can be produced by any other mechanical process, and at the same time will greatly **REDUCE** the **TIME** and **POWER** required for Beating.



MARSHALL ENGINE CO., Turner's Falls, Mass.

BENTLEY & JACKSON, Bury, England, Near Manchester.

USED IN THE LEADING MILLS OF THE WORLD.

A. KAINDLER, 60 Rue St. Andre Des Arts, PARIS.

YOU CAN USE THE AEROPHOR PAPER DAMPENER

THE "AEROPHOR" MARK.

ON ALL YOUR MACHINES AND IMPROVE THE FINISH QUALITY OF YOUR NEWS, BOOK AND MANILLA

MANUFACTURED BY
THE U. S. AEROPHOR AIR MOISTENING AND VENTILATING CO., West Exchange St. and Brayton Ave., Providence, R. I.

76,125,000 GALLONS OF WATER A DAY

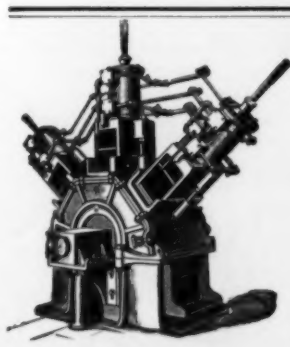
Are Purified in PAPER and PULP MILLS by the use of the

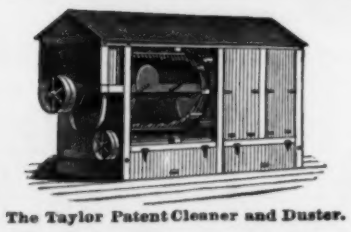
WARREN FILTER,

A PAPER MAKER'S INVENTION FOR PAPER MAKERS' USE.

MANUFACTURED BY
CUMBERLAND MFG. CO., 220 Devonshire St., BOSTON.

HOLYOKE MACHINE CO., HOLYOKE, MASS.





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All Kinds of CALENDERS for PAPER MILLS, GLAZED PAPER and CARDBOARD MANUFACTURERS.

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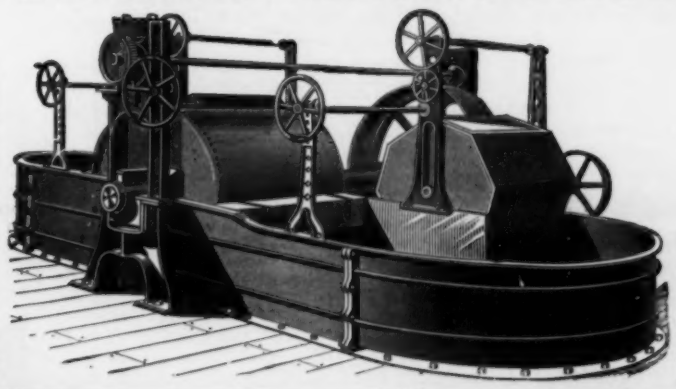

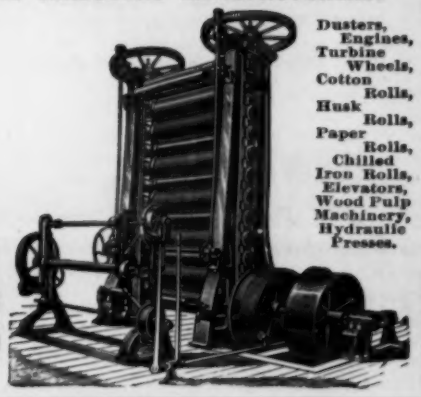

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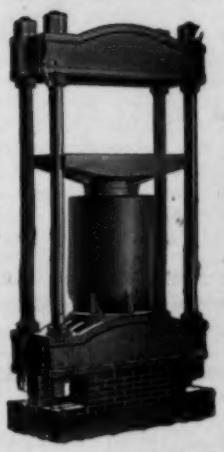

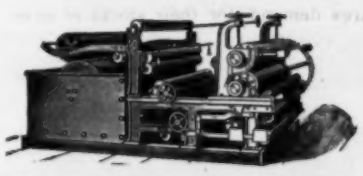

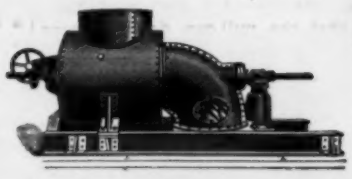

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THE BINGHAM COMPENSATING WINDER. FOR TWO REELS.

FOURDRINIER PAPER MACHINES.

LATEST DESIGNS. GREATEST RECORD OF PRODUCTION. HIGHEST DEGREE OF WORKMANSHIP. INSURING MINIMUM OF AFTER EXPENSES FOR REPAIRS.

Compensating Winders for any desired number of rolls.
Two and Three Plunger Stuff and Suction Pumps.
Hard Maple Press Rolls and Suction Box Covers,
Bronze, Rubber Covered and Chilled Iron Press Rolls,
Hydraulic Feed Pulp Grinders, Screens and Wet Machines—all of late and improved designs.

WHEN YOU WANT ANYTHING IN OUR LINE WRITE US BEFORE ORDERING ELSEWHERE.

DO NOT FORGET

That every ***New England Pulp Grinder*** ever made or sold in this country has been designed, built, and first sold by me; and I am sole owner of the right to use the name "New England" as applied to a pulp grinder, as the United States Patent Office records will show, and no other person is or has ever been interested with me in the manufacture of Pulp Machinery.

All the rights and interest of the Scott & Roberts Company and the New England Pulp Machine Company which were organized for the purpose of selling my pulp machinery were acquired by me more than four years ago, since which time many changes and improvements have been made in the New England Pulp Grinder.

I am prepared to furnish at short notice everything required for making ground wood pulp, including plans and specifications, and estimates for which I will furnish same; and erect the whole, if required, ***guaranteeing a greater production of pulp,*** with a given power and at a less cost for manufacture, than can be done by any other machines; and no pay asked until machines perform as stipulated.

Can furnish any of the leading ***Turbine Water Wheels,*** fifteen styles ***Pulp Grinders, Noiseless Screens, Wet Presses, Sawing Machines, Barkers, Splitters, Pumps, Shafting, Mortise Gears, Pulleys, &c.***

Remember you can have a ***guaranty*** of the ***cost*** of ***your mill;*** also of the ***cost per ton to manufacture the pulp.*** Liberal terms.

I have on hand ***six Pulp Grinders,*** three pockets, to grind wood 17 inches long; and ***eight Grinders,*** heavy pattern, to grind wood 24 inches long; also ***Barkers*** and ***Splitters.***

Many of the old style New England grinders can be rebuilt so as to greatly improve them.

More than **FOUR HUNDRED** ***New England Grinders*** in use.

Don't use an old superannuated machine, nor an inferior imitation, when you can buy a genuine, good Grinder at the low prices at which they are now offered.

I have on hand for prompt delivery six heavy Pulp Grinders, lately made to order, three pockets, to carry Grindstone 18 inches thick, 50 inches diameter; also eight Grinders, heavy pattern, three pockets, to carry stone 25 1-2 inches thick and 52 inches diameter. These will be sold at reduced prices and on extra favorable terms, fully guaranteed in every particular. Also on hand Barkers and Splitters.

OLIN SCOTT, Bennington, Vt.

FARREL FOUNDRY AND MACHINE CO.,

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THE LARGEST MANUFACTURERS OF

Chilled Rolls

IN THE WORLD.

ALSO MANUFACTURERS OF GRINDING MACHINES FOR ALL KINDS AND SIZES OF ROLLS.

CHILLED AND DRY SAND ROLLS

FOR ALL PURPOSES.

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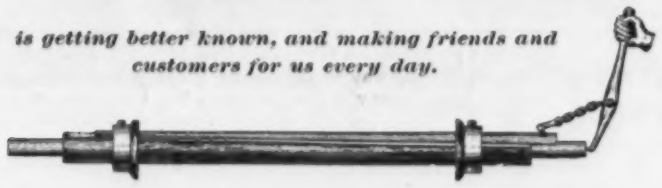

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PART II.

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CHAPTER III.—**Processes for Isolating Cellulose.** Rag boiling; special treatments for various fibres, as jute, straw, esparto; review of miscellaneous processes for treating wood; the water process, aqua regia, &c.; the soda process, history; preparation of liquors, boiling, washing, recovery, sources of loss; analyses of chemicals and liquors; the sulphite process, history; general principles; the different systems; liquor apparatus; preparation and analyses of liquors; digesters; linings; boiling; subsequent treatment of pulp; waste liquors; recovery. The sulphide and sulphate processes.

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CHAPTER VI.—**Coloring.** Mineral colors; vegetable and animal colors; aniline colors; chemical properties; effect of alum and traces of bleach or alkali in different colors; distinguishing tests; effect of different waters.

CHAPTER VII.—**Water and Water Supply.** Character and analyses of different waters; ground waters; surface waters; river water; artesian well water; hard and soft waters; boiler scale; effect of waters on size and colors; various systems of filtration; use of alum; softening water; self purification of streams; natural filtration; effect of storage; vegetation in ponds; crenothrix; consumption of bleach by waters.

CHAPTER VIII.—**Chemical Analysis.** Description of apparatus and methods for testing the purity and strength of all paper making chemicals, colors, &c.; common impurities and adulterants given; full description of methods of analysis for sulphite and soda liquors, bleach solution, alums, &c.

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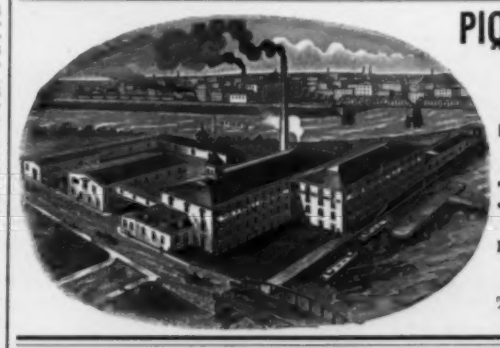

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they consider the phonograph almost indispensable.

Edward R. Bulkley, manager for George Anthony & Co., was so unfortunate as to meet with a painful accident this morning. He had gone into their rag warehouse on Minor street, and unhappily fell over a truck, breaking his left leg. He was taken to the Pennsylvania Hospital for immediate attention. Sympathy for Mr. Buckley, who is affectionately known as "Uncle Ned," was expressed on all sides by the paper men.

In the paper box trade, W. P. Datz, of W. P. Datz & Brother, said to-day that there were a number of novelties in folding boxes for the accommodation of various purposes, but nothing new outside of that. Their strawboard factory is very busy finishing stock for their own manufacture. Straw is much higher in price now than a year ago, they being required to pay from $6.50 to $7 per ton, whereas from $3 to $4 was the maximum in 1894. This fact contributes materially to the high market price of strawboard at present.

In rag paper stock lines there has been little doing; dealers seem disposed to ask higher prices, which in the present condition of the paper trade manufacturers do not feel that they can pay. Quotations are as follows: No. 1 whites, 2⅞@3c.; No. 2 whites, 2¼@2⅜c.; thirds and blues, 1¼@1⅜c.; colors free of blacks, ¾c.; blacks, ½c.; hard white shavings, 2½@2⅝c.; soft white shavings free from wood, 1½@1¾c.; No. 2 shavings, ⅞c.; mixed shavings, 1@1⅛c.; news, ½@⅝c.; book stock, ⅞@1c.; manillas, ⅞@1c.

In the chemical market there has been only a small movement. Bleach, on spot, is scarce at 1.80@185c.; 48 per cent. soda ash caustic is in limited demand at 1⅜@1½c. Considerable speculation is indulged in as to next year's prices for bleach, soda ash and alkali, but it is yet too soon to ascertain what these will be. Buyers as yet are awaiting developments.

The following named members of the trade have been in the city during the past few days: Chas. E. Callender, of Glendale, Mass.; Robert Bishop, of Boston; Frederick Bill, of the Springfield Envelope Company, and Mr. Kimberly, of the Kimberly & Clark Company, Neenah, Wis.

The Messrs. Rudolph, of Rudolph & Sons, are in New York to-day attending a meeting of the strawboard combination.

RETLAW.

GREAT BRITAIN.

[FROM OUR REGULAR CORRESPONDENT.]

LONDON OFFICE PAPER TRADE JOURNAL,
1 Mitre Court, Fleet St., E. C.,
LONDON, October 5, 1895.

Liverpool has been shaking hands with Manchester over the ship canal, which is rather a curious thing to see. A large party of Liverpool brokers were the guests of the ship canal authorities at trips down the water, inspections of the docks, lunches, dinners, &c., and were extremely friendly and complimentary. Hitherto the Liverpudlians have flattered themselves that very little American cotton has passed the port of Liverpool, although the Egyptian cotton, which goes principally to the Bolton district, has sailed up into the Manchester docks. Now, however, there is going to be a change. The president of the Manchester Cotton Association made a most important announcement at a meeting held last Tuesday. He said that the two great shipping ports of New Orleans and Galveston had made arrangements to ship their cotton direct to Manchester in future, and this would be at the same freightage as to Liverpool.

You see I can't avoid my old King Charles' head, the ship canal, this week. There has been a phenomenal delivery of wood pulp at the Manchester docks during the last seven days, no less than seven steamers arriving with an aggregate cargo of over 4,000 tons. Most of these came from the Baltic ports, and six steamers with large cargoes of wood pulp are yet on their way. All round, however, there have been immense importations of paper making material just lately. Scandinavia has made record deliveries at most of the ports, and the register includes 1,950 bales from Canada. There have even been deliveries from Boston and New York. Finland and Holland both sent a fair amount, but Germany seems to be falling altogether behindhand.

Talking about wood pulp there seems to be the beginning of a very pretty quarrel as to the paper agents selling the raw material. It is not quite a new thing, but in paper making circles there is great soreness that certain firms offer both wood pulp and foreign paper. Naturally in this case the agent competes with his customers. A firm of paper makers has written an indignant letter on the subject to Mr. Stonhill's paper. I think from my own knowledge that the smaller fry among the agents are attempting to run with the hare and hunt with the dogs after this fashion. The large firms at the top of the tree keep strictly to the sale of paper mill requirements. One of these, it is true, does sell a small quantity of a particular description of paper, but I believe that this is a sort not made at all in England.

The National Union of Paper Mill Workers is growing stronger and stronger. There is no union of workers which has less friction with the masters. At a meeting held a week ago of the Darwen branch William Ross, the general secretary, said that within the last two months two new branches had been opened and over a hundred new members enrolled in Lancashire and the Midland district. In Scotland and the North they had enlisted sixty members during the month.

When James McMurray turned over his paper mill to a limited company about three years ago it was considered to be one of the finest mills in the Kingdom. McMurray's Royal Paper Mills on the Wandle, near where this little stream joins the Thames at Wandsworth, at one time supplied the *Times* with a large portion of its printings; in fact, I think it does so to this day. These large paper mills do not always flourish under the change when they are turned over to limited companies, but this is an exception. They have done so well that it has been found necessary to increase their paper making capacities, and Masson, Scott & Bertram are hard at work at the the mills. One of the old machines is to be widened and a new one is on order.

The twenty-first annual general meeting of C. Davidson & Sons, Limited, has been held at Mugie Moss, and the report is highly gratifying. In moving its adoption John Davidson said that the directors were glad to be able to submit accounts showing a rather better balance than that of last year, and added also that this had been accomplished during a time that was very unsatisfactory for trade. The most hopeful feature was that the greater part of the profit had been made in the latter half of the year. The present year had begun well, and there were plenty of orders, although prices were not what they would like to see.

Some Spanish gentleman, impressed with the idea that bank notes carry infection with them, collected some of the dust germs from them and succeeded in killing a turkey or two by inoculation. This does not seem to be very brilliant proof of the harmfulness of the bank note, for there is no actual necessity to administer bank notes to turkeys. Actual proof is difficult to procure in such cases, but that bank notes certainly absorb harmful matter has been proved by the experience of a bank clerk in Vienna quite recently. The man in question had to count a large number of notes, and, as is commonly done, in order to turn them over more speedily he wetted his fingers. He rapidly experienced pain on his lips, a tumor ensued, and in spite of an operation he succumbed from the effects of the poison absorbed.

I understand that the enormous new machine for the Clyde Paper Mills is ready to be put up. The wires are being woven and it is believed that it will be started up this year, or at least very early in the new year.

During the late war between China and Japan it was reported by the press correspondents that the Japanese soldier was wearing paper clothing. It is said now that the manufacture of paper underclothing has grown into an important industry in Japan, and has even found a clientèle in England among the ladies. It is said that the articles—modesty forbids any particular mention of them—are of a specially prepared tough kind of paper and that this when made up into petticoats, &c., is absorptive, smooth, pliant and not very easily torn.

The great point, of course, is that the washing bills are saved, and when these paper underclothes are changed they are so cheap that they may be simply popped into the fire, with no feeling of extravagance lingering behind.

It is usually asserted that stamped paper for revenue purposes was the idea of a British tax gatherer of olden times, but it seems that it was invented in thrifty little Holland. Early in the seventeenth century, when pretty nearly every commodity in the Low Countries was heavily burdened with taxation, and revenue was yet insufficient to meet an increasing expenditure, it became a pressing problem how to raise the additional money needed. In the hope of finding a way out of the difficulty the states of Holland offered a prize to the individual who should invent a new impost which should be productive to the finances of the republic, and at the same time as little burdensome as possible to the already overburdened taxpayer. An ingenious Dutchman, whose name is now unknown, hit upon the device of prescribing the use of paper stamped with the seal of the states—the amount of the tax varying with the size of the seal—for receipts, legal documents and many other business and official papers. The idea was adopted and stamped paper came into use in Holland in 1624. From Holland the new method of raising revenue soon spread to other continental states and countries, and in these islands the first stamp act was passed in the reign of William and Mary in 1693.

The *Artist* gives an interesting account of some old flock papers at Hampton Court Palace. Painting by hand and stenciling were among the first systems tried to produce decorative coverings for walls, and they were followed by block printing and by other processes which are now unknown. In the present day manufacture the paper is bought by the paper stainer in huge reels, each containing about eighty pieces of 12 yards, or rather over a half a mile in one continuous length, and the colors are procured from color makers in the form of impalpable powders or paste, unsized, but otherwise ready for use. There are flock papers on the walls of Hampton Court Palace which have been there long before anyone living to day was born. They are printed on the old joined paper, which at once takes back the date of their manufacture about ninety years and probably they are twice as old.

Among the most important of the ways in which flock is turned to decorative account is by means of raised flocks, which are either colored or in the white for painting over. By far the greater part of those made at the present time are on colored grounds, and they are hung without painting until they are soiled, when a coat of paint makes them again fresh and bright. These papers are easy of application, are very inexpensive compared with other materials producing a somewhat similar decorative effect, while the back is solid, and they are free from any offensive odor. The raised designs look so sharp, and are left with such a fine, even surface, that many people imagine they are in some way cut out or stamped, but this is not the case; they are printed in a sticky oil color, the printed paper is passed into a drum with a linen bottom, the flock dust is thrown upon it, and the drum is beaten vigorously with a cane, causing the flock dust to adhere to the oil color and form an equal coating. The two operations of printing and flocking are repeated time after time until the required amount of relief is obtained, the sharpness of the arris and the general evenness of the surface being dependent upon the skill of the operator. Cheviot flocks are longer in their staple than ordinary wool flocks, and are made from goat's hair. Silk flock and flock on a silk background are the most modern and the richest outcome of this branch of the paper stainer's art.

The hot weather, which lasted to the end of September, has at last given place to quite a cold spell. With the heat the lassitude which really prevented business has also gone. Nearly everybody is willing to acknowledge that things are really a little better. The enormous importations of raw material show that paper makers are busy, and everywhere I hear the same qualified acknowledgment that there are plenty of orders stirring, but that prices are terribly bad. It has been said that the Lancashire mills have not shared in the improvement of trade, but although they are not doing absolutely well, they are doing better than they have done for some time past. Yet, in spite of the ship canal, fate seems to be a little against them, and one or two which have been shut down for a long time continue to find it impossible to discover a speculator enterprising enough to start them up. Lately a mill at Staly bridge was offered by auction after an elaborate flourish of trumpets in the press. There was not a single offer for the property.

ALFA.

Beating Stock.

[WRITTEN FOR THE PAPER TRADE JOURNAL.]

BY JAMES HALL.

It is often said that "marriages are made in heaven." That is the "good" and the "happy" marriages. Whether this be true or not we have no means of knowing. It is all very well as a sentiment. We may, however, affirm as being something more than "sentiment," a positive truism, that the paper on which the marriage certificate is printed, as well as all other "good" paper, is made in the beater room.

Any paper maker who neglects his beater room will fail to attain anything like proficiency in paper making. It is, alas! getting too much the practice in these days of fast driving and large outputs to scamp the beating of stock. Some do it because of inadequate beater power to keep the mill running up to the hilt; others from lack of that scientific knowledge so essential to good paper making. One man says: "We cannot give it much time in the beaters because we have not the time to spare;" while another will discard the beating altogether and claim that the beater is only necessary as a "mixer" of stock and the ingredients necessary to make paper. Both men will tell you that the Jordan or the Marshall will do all of the beating that is needed.

The inventors of the Jordan or the Marshall never put them forward as beaters but as refiners of stock; that is, after the stock has been well brushed out in the engine, the Jordan and the Marshall will so refine and draw out the fibres of the stock as not only to make it pass the screens without difficulty, but give character and uniformity to the sheet when made, and it would be quite as logical, and just as reasonable, for a man to say that there was no need to masticate his food on the ground that his stomach would be able to do that little business for him, as to expect the Jordan or Marshall engines to do the whole process of beating. The maker who does this will fail in getting an even and uniform sheet of paper, or as well closed a paper as he might by proper preliminary treatment of the stock while in the engines.

The makers of fine book and writing papers know too well the good effects of having the stuff well drawn out in the engines to require instruction or persuasion on this point. There are others again making lower grades of book paper who eschew beating, while the makers of cheap news neglect it altogether. This is a mistake. The newspaper publisher likes a good, well closed sheet as well as the publisher of books, and if the beating power of a mill is inadequate to give the stuff proper treatment in the engine, the sooner this is rectified by putting in additional beaters the better it will be for the mill.

There is, in my judgment, no part of a paper mill so important as the beater room, nor one requiring more careful attention and good judgment to work successfully as the beating of the stock, if the object is to produce a high grade of paper.

If a man is quick to learn he may with constant practice and careful observation of the modes adopted by other and more experienced workmen very soon become an efficient beaterman; but in addition to the skill and experience a beaterman needs, above everything else, to be reliable; that is, he must be found trustworthy enough to have every engineful of stock uniformly beaten, and not beat one efficiently and then scamp the next. A beaterman of this kind is better out of the mill than in it, for there is nothing so disastrous to the make of good paper than this want of regular and uniform beating. How very often has the superintendent of a mill, as he goes his morning rounds, to grieve over the imperfect work of a beaterman through whose ignorance, carelessness or indifference—or all three combined—the paper made in the night is altogether inferior to that made on the preceding day? Very wicked though it may be, it is from causes such as these that many a good man is tempted to use and often does use language condemned by the decalogue, and not found in Webster.

Beating stock is a science and ought to be very carefully studied by anyone who seriously wishes to become proficient in the art of paper making.

One of the first things to be considered is the nature of the stock on which he is going to operate, as some stocks can be brought forward in three or four hours and sometimes even less time than that, while others will require ten or twelve hours and sometimes more.

The science comes in, therefore, in the skillful manipulation of the roll. The beaterman will need to observe as an axiom that the idea is not to grind the stock, but to draw it; that is, draw out the fibres without injury to its strength. This can only be done by judicious application of the roll. If a thin sheet is being made, the object should be to leave the fibres as long as possible consistent with the making of a well formed sheet, and this can only be done by letting the roll work light and easy on the bed-plate. If the roll is put down too hard the fibres are cut up in such a way as to endanger the strength and tenacity of the paper.

On the other hand, where a thick paper is being made, and especially one of close texture, the roll will have to be let down more heavily in order to draw the fibres more finely. To produce a paper of this kind, which shall have some degree of strength and tearing capacity, the stuff will need to be kept longer in the engines. It is not always the paper with the longest fibre that will prove the strongest. If when the engine is filled in care be used for the first hour or so not to cut the fibre, but gently brush it so as to open it out prior to the fuller application of the roll, then the workman may expect to achieve his object by obtaining a strong and closely felted sheet. If the roll is worked too heavy at the start the fibres will be cut up, and the result will be a raw sheet of paper, and the stuff will moreover work too free on the wire.

Where the beating is carried out as here recommended, the fibres being fine and uniform in length, they will unite more closely under the shake of the wire, and in this way produce not only a much stronger and finer grade of paper, but paper which will carry more clay, as the closing of these fine fibres on the wire will prevent the clay from escaping through it, and help close up the little interstices between the fibres themselves, giving to the paper all of the appearance as well as all the reality of a well closed sheet.

Stock manipulated in this way will pass through the screens more readily than in the case of long fibred half stuff, necessitating, as it invariably does, the constant scraping of the face of the screens, thereby discharging at every such operation a heavy lot of dirt of all kinds into the paper.

In making thick papers the roll should be let down from the very beginning of the beating. This is absolutely necessary to get the stuff fine and "free," which gives the suction boxes a better chance to eliminate the water and close up the sheet before it passes from the wire to the couch.

Where stock is being prepared for soft papers, such as blotting, for example, it should be cut up or drawn out as quickly as possible, and need not be kept more than two hours in the engine to do this. Such quick and expeditious treatment is necessary for the retention of the absorbent properties of the stuff.

One of the most difficult things which a beaterman is called upon to do is that of beating three or four different kinds of stock in one engine. For example, an engine might contain a mixture of what, without naming any fibre in particular, might be called hard and soft stock, one used for strength and the other as a filler in.

In a case like this, if the soft stock is the larger element of the two, the roll should be let down easy; but if the hard stock is the greater in bulk, then the roll should be let down hard; the softer fibre will of course get beaten very fine, but this will be no detriment, as it will tend to fill up the spaces left by the coarser and stronger fibre, and so make a really close and well felted sheet of paper.

There are, of course, many details to which a beaterman will have to give attention in order to produce the best results. The engines should be well stirred up throughout. In the very best engines stuff will lodge, and if not dislodged will give trouble and disfigure the sheet. Modern builders of beating engines have done much to prevent lodging of stock, but in the best of these there is a tendency for stuff to collect in obscure corners of the engine. The beaterman will soon find out these places, and should use his paddle to remove it as the beating progresses.

With respect to the furnishing of an engine, as soon as the stuff is all in the clay and alum may be added, thus giving every opportunity for their absorption by the stock. A full hour before letting down the engine, the color should be put in, and the size half an hour afterward. Some beatermen are careless on these points, and will sometimes put in size before the coloring matter. Such a practice as this will lead to varied and imperfect coloring. It is just as absurd to do this as it would be for a carpenter to varnish his article of furniture before staining it. The fibres will readily absorb color in their natural state, but when size is put in first the fibres become coated therewith and will not be so sensitive to the action of the color.

In the construction of beating engines many improvements have been added of late years. The desire to effect big outputs of paper has stimulated scientific machinists to the construction of engines which shall carry large quantities of stock and at the same time not seriously add to the driving. One such engine the writer recently inspected at Noble's machine shop, in North Hoosick, of which Samuel S. Stevens, of the same place, is the inventor. It consists of two rolls, the stuff traveling down each side, getting beaten in transit, and returning through the centre of the engine. It is very like the Forbes engine, made by the Bertrams, of Edinburgh, only that the latter has a whirligig kind of wheel fixed between the two mid-feathers, which is called a "mixer."

In Mr. Stevens' engine, however, there are some important improvements in the packing and setting of the bed-plate, which need to be seen to be appreciated. It is very gratifying to hear that this latest invention is giving satisfaction where introduced. This is certainly an age of improvements!

The man who takes the trouble to invent little tools and jigs for helping along his work is a valuable man to have, and the right kind of a foreman will encourage him by taking an interest in it, suggesting points or other applications, and in other ways showing him that his efforts are appreciated. All jigs may not be economical and all plans suggested for work may not be useful, but the right kind of a foreman will have his men feel free to discuss these questions before the tools are made, and by so doing save the cost of various experiments.—*Machinery*.

Some Mechanical Observations.

[WRITTEN FOR THE PAPER TRADE JOURNAL.]

By M. W. Danielsen.

There is always a demand for competent engineers and millwrights. The repeated failures of which we hear, and of men holding engineers' certificates doing firing, working at the bench, or perhaps at common laboring occupation, is not so much the lack of a market for engineers as it is incompetence of these men. It is of no use to say that any man can do it if he will. He can do it if he does it, but unless he has a serene and imperturbable disposition he cannot stand disappointments and cannot keep up the nerve required for the work.

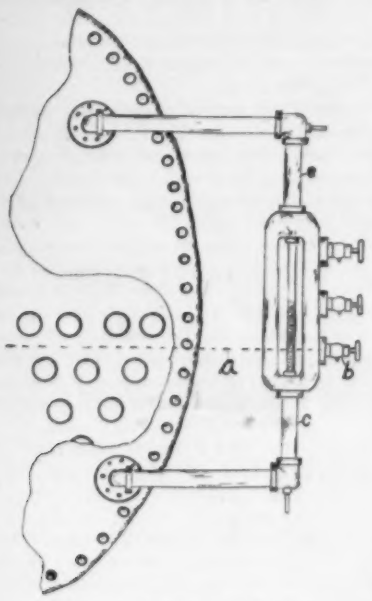
Engineers must be specially equipped with courage, forethought and ability to act. The steam plant is the vital part of a mill, and all of the skill and attention possible should be directed to its preservation in good order and at the smallest possible expense consistent with good.

Engineers who work carefully and with judgment are wanted. It is, of course, evident that the same method is not practicable under all circumstances, for while the general principles involved are in all cases the same, the working out of the principles necessarily varies.

Every boiler, no matter how strongly built or braced, has a bursting point somewhere; yet we see men running boilers with the safety valves stuck so that they are practically useless for the purpose for which they were made. Others have safety valves extra weighted, so as to stop the noise of blowing off, and when the pressure falls they forget to remove the extra weight.

No guesswork by the engineer should be tolerated. The mill manager cannot permit his engineer to take risks or chances. Too much stress cannot be laid on the importance of making a good fit in changing or altering pipes or steam connections. The habit among too many engineers, in spite of special commands to be careful, &c., is to take chances.

An engineer once had occasion to make some alterations in his water gauge and connections. He removed the gauge, and in replacing it the change in the pipe adjustment brought the lower of the three try-cocks below the level of the top tubes of the boiler. The result was that the arrangement was as illustrated in the diagram, the dotted lines (*a*) indicating the level of the bottom try-cock (*a*) and its relation to the height of the upper tubes. The engineer was one of the careless sort; he did not take any measurements, but took chances on everything, and in time he lost his job. It was necessary to clean out the boiler one day, and the proprietor of the plant discovered the defective setting of the gauge. He had the gauge taken out, and the pipes *c* and *e* changed, so as to bring the level of the bottom try-cock about 3 inches above the level of the top tubes. This is the correct position, for when no water flows from the lower try-cock it will be known that the water is near to the tube.



Careless Setting of Gauge.

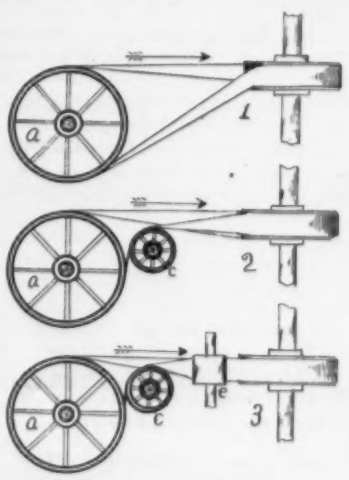
The millwright is another important man in a manufacturing plant of any kind. There are many millwrights who can keep things going, but just how is a question. The well managed mill will employ a man to look after the shafting, cogs and belts, and if he is competent he will earn his wages several times over. The incompetent man will recog a wheel in such way that power will be lost, while the other will do the work so nicely that the gears will run freely.

In recogging a wheel the first move after the blank cogs are fitted should be to obtain the proper length from base to point. This is obtained by measuring the length of the cogs or teeth in the pinion or other wheel which is to be driven by it. It is important that both shall correspond in length. After the cogs are reduced to their proper length the pitch line is found at a point just three-sevenths of the length of the cog from the point of the cog and four-sevenths from the base. Next, with the compass, ascertain as near as possible the distance around the wheel from the centre of each cog.

The spaces which represent a cog and space will be the true pitch of the gear. We all recognize the miserable racket which old-fashioned cast gears make where the load comes all on one side, while the rest of the gear seems to run idle at every turn of the wheel. Now, machine molded gears are set so firmly and solid in just the position that they belong that little is ever heard from them.

The quarter twist plan of running belts is always severe upon the leather, as the belt usually pulls off the driven pulley at an angle, bringing considerable strain on one edge of the belting, and in time the edges split and work open, requiring a new belt.

This is shown in No. 1 in the following diagram, *a* being the driver, the belt running off from this in the direction of the arrow. To overcome this unequal strain upon the belt as much as possible without disturbing the general arrangement of the system an idler is employed advantageously, as shown in No. 2. In this *a* is the driver and *c* the idler pulley. By using this plan the belt is caused to pull on the tight side, and the edge of the belt is much relieved from strain. Another good way is to use two idlers, as in No. 3, where *a* is the driver and *c* and *e* are idlers. When this system is set correctly quarter belt drives can be run effectively and without damaging the edges of the belts.



Running Quarter Twist Belts.

A millwright whose knowledge of mill work ends with keeping the power system in repair does not have much of a show to hold his own long.

True, the man who has to attend to the mechanical parts of the mill cannot reasonably be expected to know everything relating to the business, neither is he expected to be a jack of all trades; but manufacturers now expect that their millwrights shall be competent to take a hand at most everything.

It would well repay the man in charge of a power plant if a thorough examination were made for leakage or small defects at regular intervals of, say, once a month. On the same occasion the shafting, pulley belts and pistons of the engine should be examined.

With systematic attention to these matters loss of steam by leakage or loss of power through defective driving gear could not go unawares for a great length of time, and when found the proper remedy could be applied for its prevention.

The great point is to keep close watch and to know when things are not running right.

Keep Your Boilers Clean.

The importance of keeping the tubes of a boiler clean, not fairly clean, but clean, was brought home to us in a very impressive manner by the review of a test recently made by a well-known expert. A horizontal tubular boiler of ordinary size and proportions was given a thorough cleaning inside and out, and then put under test, frequent observation of the coal consumed, water evaporated and uptake temperatures being made. From the beginning to the end of the test, extending over a number of days, there was a progressive increase in the coal required to evaporate a given quantity of water and in the stack temperature. A repetition of the test with a device in operation which scraped the tubes while the boiler was in use showed a maintenance of the initial efficiency, and quite a considerable increase in the average efficiency as compared with the boiler as ordinarily run. Keep your heating surface clean. It is worth while, especially, if you have not much of it.—*Power*.

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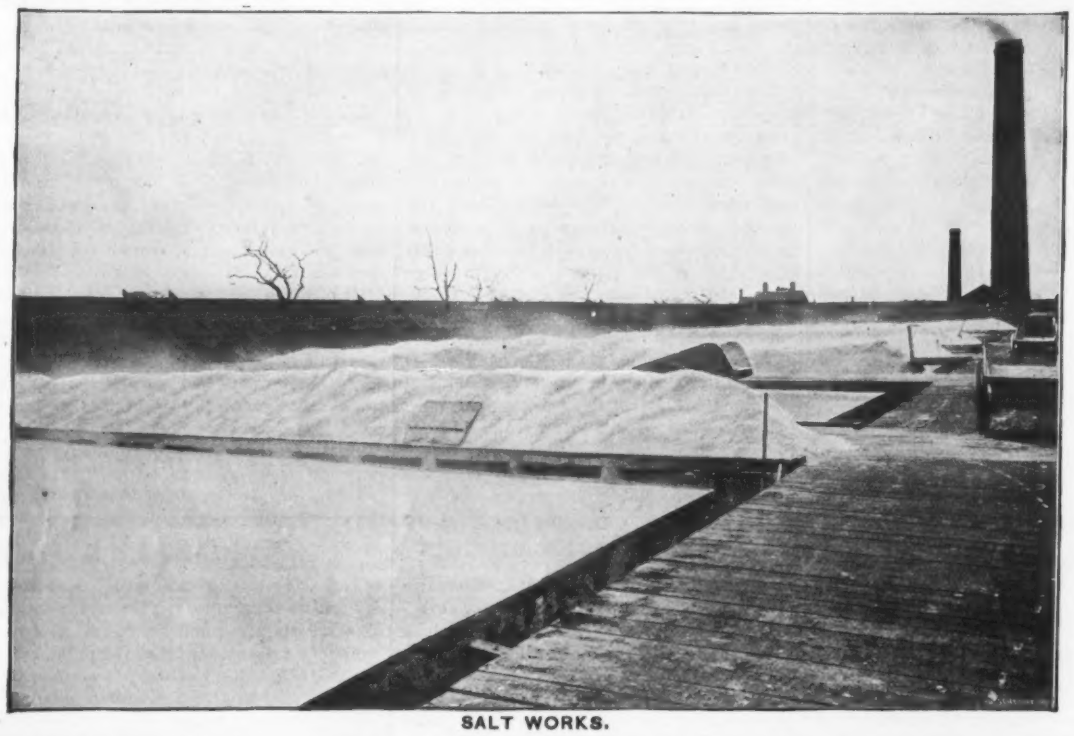

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Imports and Exports.

IMPORTS AT NEW YORK.

FOR THE WEEK ENDED OCTOBER 11, 1895.

An. Colors..	782	$50,747	Paper.....	769	$34,463
Alum.....	5	127	Steel Pens..	3	3,091
Alum's Cake	—	—	Stationery .	8	286
Bl. Powders	471	8,581	SlatePencils	39	190
Soda Ash...	2,126	12,231	Clay.....	—	5,328
Soda, Caus.	670	7,534	J'te B'ts,&c.	37	303
Soda, Sal....	—	—	P.Hangings	16	528
Soda, Hypo.	—	—	Pap'r Stock	4,544	39,996
Ultramarine	120	1,976	Terra Alba	53	76
Books.....	385	38,641	Waste.....	28	4,704
Newspapers	283	10,037	Wood Pulp	489	2,387
Engravings.	37	2,104			
Ink.....	445	3,405		—	—
Lead Pencils	9	1,124	Totals...	11,319	227,859

Imports General Merchandise for the week ended October 11, 1895..... $7,735,299

IMPORTS OF PAPER STOCK AT NEW YORK.

FROM JANUARY 1 TO OCTOBER 16, 1895.

Whence Imported.	*Rags.*	*Old Papers.*	*Chemical Fibre.*	*Ground Wood.*	*Manilla Stock.*
	Bales.	Bales.	Tons.	Tons.	Bales.
Alexandria...	685	....	....	....	....
Antwerp.....	3,970	5	1,476	....	14,002
Bordeaux.....	2,430	....	....	....	850
Bremen.....	2,829	725	49	....	3,028
Bristol.....	15	...	....	....	2,657
Buenos Ayres.	520	....	....	....	....
Calcutta.....	....	...	....	....	6,934
Cen. America.	180	....	....	....	....
Christiania....	....	....	85	....	....
Copenhagen..	...	....	125	....	1,581
Dundee.....	....	....	26	....	809
Fiume.....	....	....	34	....	....
Geestemunde.	412	....	....	....	537
Genoa.....	808	....	....	....	3,588
Ghent.....	90	40	....	....	395
Glasgow.....	187	53	....	....	78
Gothenburg ..	20	....	....	....	....
Hamburg.....	6,949	322	1,857	....	3,846
Havre.....	60	....	....	....	1,195
Hiogo..... ...	8,237	....	....	....	....
Hull.....	5,536	40	2,179	....	9,290
Kobe.....	11,578	....	....	....	....
Leghorn.....	2,437	....	....	....	185
Liverpool.....	974	197	....	....	15,551
London.....	6,185	1,747	....	....	9,608
Marseilles....	155	....	30	....	2,197
Nassau.....	8	....	....	....	....
Newcastle....	....	221	....	....	2,665
Rosario.....	....	....	....	....	98
Rotterdam....	3,053	....	67	....	4,013
Stettin.....	1,167	....	160	....	1,537
Trieste.....	123	....	45	....	....

NEW YORK IMPORTS.

FROM OCTOBER 9 TO OCTOBER 16, 1895.

Paper Stock.

R. Helwig, Friesland, Antwerp, 90 tons chemical fibre.

Ralli Brothers, Walter H. Wilson, Calcutta, 400 bs. manillas.

Nairn Linoleum Company, Croma, Dundee, 25 tons chemical fibre.

G. Hamilton, Bohemia, Hamburg, 30 tons chemical fibre.

S. Goldman, by same, 25 tons chemical fibre.

A. G. Paine & Co., Phœnicia, Hamburg, 25 tons chemical fibre.

G. Rau, by same, 5 tons chemical fibre.

F. Bertuch & Co., by same, 30 tons chemical fibre.

F. Salomon & Co., by same, 300 bs. rags.

Train, Smith & Co., by same, 22 bs. rags, 279 bs. bagging.

Train, Smith & Co., La Gascogne, Havre, 69 bs. rags.

Lewy Brothers, Colorado, Hull, 41 bs. rags.

Lewy Brothers, Manitoba, London, 99 bs. rags.

Castle & Gottheil, by same, 120 bs. manillas.

Lewy Brothers, Virginia, Stettin, 73 bs. rags.

Paper.

Photo Material Company, Spree, Bremen, 4 cs.

L. De Jonge & Co., Bohemia, Hamburg, 68 cs.

John Munroe & Co., Virginia, Stettin, 115 cs.

W. H. S. Lloyd, St. Louis, London, 3 cs. hangings.

J. C. Druckleib & Co., by same, 50 cs.

Hensel, Bruckmann & Lorbacher, by same, 79 cs.

Henry Lindenmeyr & Sons, Phœnicia, Hamburg, 34 cs.

John Hunter, Colorado, Hull, 11 cs.

BOSTON IMPORTS.

FROM OCTOBER 10 TO OCTOBER 16, 1895, INCLUSIVE.

Paper, &c.

W. H. Guild & Co., Catalonia, Liverpool, 9 bs. periodicals.

B. F. Woods, by same, 1 cs. printed music.

Neal Morse & Co., by same, 1 cs. stationery.

Dennison Manufacturing Company, Sagamore, Liverpool, 37 cs. crêpe paper.

Carter, Rice & Co., Roman, Liverpool, 7 cs. paper.

Paper Stock.

Train, Smith & Co., Colorado, Hull, 634 bs. rags, 47 bs. manillas.

Horace Dutton & Co., by same, 72 bs. rags, 212 bs. flax waste.

Train, Smith & Co., Sagamore, Liverpool, 54 bs. waste paper.

Train, Smith & Co., Roman, Liverpool, 49 bs. waste paper, 50 bs. manillas.

T. F. Ring, by same, 12 bs. rags.

Horace Dutton & Co., by same, 396 coils manillas.

Horace Dutton & Co., Cambroman, Liverpool, 36 bs. and 77 coils manillas.

Edwin Butterworth & Co., by same, 30 bs. rags.

Train, Smith & Co., St. Ronans, London, 1,114 bs. rags.

Wheelwright Paper Company, by same, 218 bs. waste paper.

Horace Dutton & Co., by same, 238 waste paper, 253 coils manillas.

Crocker, Burbank & Co., by same, 125 bs. waste paper.

Wood Fibre.

Morey & Co., Colorado, Hull, 410 bs.

Page, Newell & Co., by same, 526 bs.

Sizing.

E. W. McClintock, Catalonia, Liverpool, 69 bags.

Warren & Co., Sagamore, Liverpool, 200 bags.

Warren & Co., Roman, Liverpool, 357 bags.

J. W. Barlow, Cambroman, Liverpool, 30 bs.

Bleaching Powder.

J. L. & D. S. Riker, Sagamore, Liverpool, 552 cks.

Wing & Evans, by same, 83 cks.

J. L. & D. S. Riker, Roman, Liverpool, 129 cks.

J. L. & D. S. Riker, Cambroman, Liverpool, 358 cks.

Caustic Soda.

J. L. & D. S. Riker, Sagamore, Liverpool, 50 drums.

Soda Ash.

Wing & Evans, Catalonian, Liverpool, 50 cks. and 200 bags.

Warren & Co., Sagamore, Liverpool, 251 cks. and 200 bags.

Warren & Co., Roman, Liverpool, 54 cks. and 400 bags.

Warren & Co., Cambroman, Liverpool, 36 cks.

A. Klipstein & Co., by same, 21 cks. and 100 bags.

Wing & Evans, by same, 20 cks. and 80 bags.

Soda Crystals.

Warren & Co., Sagamore, Liverpool, 420 bbls.

Warren & Co., Cambroman, Liverpool, 280 bbls.

Warren & Co., Roman, Liverpool, 140 bbls.

Jerome Marble & Co., Catalonia, Liverpool, 224 cks. and 100 bags.

Pulp Stones.

Lombard & Co., Colorado, Hull, 24 stones.

PHILADELPHIA IMPORTS.

FOR THE WEEK ENDED OCTOBER 12, 1895.

Soda Ash.

Brown Brothers & Co., Belgenland, Liverpool, 150 cks., 334 bags.

Caustic Soda.

E. Hill's Son & Co., Missouri, London, 100 drums.

Salt Cake.

Pennsylvania Salt Manufacturing Company, Zion, Liverpool, 1,013 tons.

Brown Brothers & Co., Belgenland, Liverpool, 63 cks.

EXPORTS of Paper, &c., from New York for the Week Ended October 15, 1895.

BOOKS, to Argentine Republic, 48 bxs.; British Australasia, 1 cs.; British Guiana, 29 cs.; British possessions in Africa, 18 cs.; British East Indies, 19 cs.; Brazil, 7 cs.; Bremen, 3 cs.; British West Indies, 7 pkgs.; Chili, 5 cs.; London, 30 cs.; Central America, 3 cs.; Danish West Indies, 2 pkgs.; Leipsic, 16 cs.; Mexico, 1 cs.; Newfoundland, 3 cs.; Peru, 1 cs.; Southampton, 7 cs.; Venezuela, 5 cs.

PAPER, to British West Indies, 3,053 pkgs., 30 rolls; Chili, 6 pkgs.; Argentine Republic, 5 pkgs.; Bolton, 2 cs.; Cuba, 41 pkgs.; British Australasia, 53 cs.; Brazil, 409 pkgs.; British possessions in Africa, 60 cs.; Bremen, 124 cs.; Copenhagen, 2 cs.; Central America, 36 pkgs.; Hull, 7 cs.; Danish West Indies, 4 pkgs.; Ecuador, 2 pkgs.; Hayti, 6 pkgs.; French West Indies, 5 pkgs.; London, 198 cs.; Mexico, 75 cs.; Newfoundland, 30 pkgs.; Porto Rico, 1,218 pkgs.; Sandwich Islands, 36 pkgs.; Southampton, 7 cs.; Colombia, 74 cs.; Venezuela, 15 cs.

STATIONERY, to Liverpool, 9 cs.; London, 46 cs.; Peru, 2 cs.; Argentine Republic, 12 cs.; British Guiana, 2 cs.; Berlin, 1 cs.; British possessions in Africa, 5 pkgs.; Brazil, 5 pkgs.; Bremen, 16 cs.; Havre, 1 cs.; British West Indies, 20 pkgs.; Central America, 19 cs.; Dutch West Indies, 1 cs.; Hull, 4 cs.; Hamburg, 2 cs.; Hodeidah, 1 cs.; Hayti, 5 cs.; Japan, 10 cs.; Mexico, 7 cs.; Newfoundland, 4 pkgs.; Porto Rico, 42 cs.; Sandwich Islands, 24 cs.; Colombia, 33 cs.; Venezuela, 18 cs.

SANDPAPER, to Argentine Republic, 10 bs.; British possessions in Africa, 2 bs.; Antwerp, 28 cs.; Brazil, 3 bs.; Bremen, 21 bdls.; Copenhagen, 42 bdls.; Central America, 1 cs.; London, 53 bs.; Mexico, 5 bs.; Porto Rico, 2 pkgs.; Sandwich Islands, 2 cs.; Uruguay, 2 cs.; Colombia, 7 pkgs.

TWINE, to Argentine Republic, 2,100 bs.; British Guiana, 1 bale; Brazil, 53 bs., 20 cs., 1 bbl.; Central America, 1 bale; Ecuador, 12 bs.; Liberia, 1 bale; Peru, 1 box; Newfoundland, 19 bs.; Sandwich Islands, 24 bdls.; Colombia, 5 bs., 1 pkg.; Venezuela, 8 pkgs., 7 bs.

INK, to British possessions in Africa, 4 cs.; Hayti, 5 cs.; Central America, 4 cs.; Mexico, 7 pkgs.; Nova Scotia, 1 bbl.; Porto Rico, 1 cs.; Colombia, 28 pkgs.; Venezuela, 14 pkgs.

PLAYING CARDS, cases, to British possessions in Africa, 8; Central America, 1; British West Indies, 2; London, 2; Southampton, 10; Venezuela, 1.

CARDBOARD, to Mexico, 2 cs.; Porto Rico, 3 pkgs.

WALL PAPER, cases, to Central America, 4.

TAGS, packages, to British West Indies, 2.

CARDS, cases, to Hayti, 6.

PAPER BOXES, cases, to Argentine Republic, 1.

PAPER BAGS, packages, to British possessions in Africa, 58.

AGGREGATES AND VALUES.

Wood Pulp, bdls.....	—	—
Wood Pulp, rolls.....	1,894	$6,458
Cotton Waste, bs.....	40	664
Rags, bs.....	5	184
Paper, reams.....	—	—
Paper, pkgs.....	5,017	5,794
Paper, cases.....	664	16,638
Books, cases.....	197	9,329
Stationery, cases.....	289	16,941
Rosin, bbls.....	4,585	12,985
Totals.....	12,691	$68,988

Exports General Merchandise for the week ended October 15, 1895..... $5,883,083

A Leather Belt Cement.

The importance of suitable cement for making joints in leather driving belts has led the Society of Chemical Industry to indorse the following formulæ: First, equal parts of good hide glue and American isinglass, softened in water for ten hours, then boiled with pure tannin until the whole mass is sticky, the surface of the joint to be roughened and the cement applied hot; second, one kilogram of finely shredded gutta percha digested over a water bath with 10 kilograms of benzol until quite dissolved, when 2 kilograms of linseed oil varnish are stirred in; third, 1½ kilograms of finely shredded india rubber are completely dissolved in 10 kilograms of carbon bisulphide by heating, and while hot 1 kilogram of shellac and 1 of turpentine are added, and the solution heated until the two latter ingredients are also dissolved; fourth, 1 kilogram of best glue is dissolved at a moderate heat in 1½ kilograms of water, and thickened to the consistency of syrup.

One hundred grams of thick turpentine and 5 grains of carbolic acid are carefully stirred in while hot; the mixture to be poured into flat tin pans and allowed to cool, then cut into pieces and dried in the air. The cement is made liquid with a little vinegar and applied to the joint with a brush; this being done the two ends of the joint are properly placed together and thoroughly pressed between two iron plates heated to a temperature of about 86° Fahr.

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NEW YORK: SATURDAY, OCTOBER 19, 1895.

A GOOD deal of interest is being taken in the scheme to make Holyoke the head of navigation on the Connecticut River. The ground is being thoroughly examined by capable men from Holyoke and Springfield, who seem to think that no great difficulties stand in the way of carrying out the undertaking successfully. So far the chief obstacle appears to be in a stretch of river rapids, which, it is thought, can be overcome by constructing a canal along the east side of the river, the structure to be about 8 miles long. With such a canal it is claimed that the steamers now running to Hartford could extend their trips to Holyoke. The average depth of channel to Holyoke is from 10 to 12 feet, which is sufficient to float the ordinary Sound steamer. If a navigable waterway can be had, as suggested, with reasonable expenditure of labor and money, the advantages thus to be gained ought not to be ignored. It is a matter of public moment, and no private corporation should dominate it.

THE business condition of the country remains practically unchanged since our last issue. There is a sufficiently active movement of goods to indicate that even a "between season" is not without its favorable features. Prices are still being maintained, although there is a slight flutter in the iron trade which seems to point to a decline, but which, in reality, may be a scheme on the part of manufacturers to force down prices before they lay in their supplies, or it may be a natural reaction from the high values which were forcing up prices in manufacturing trades to a point which was influencing buyers unfavorably. It is hard for producers to learn that it is better to do business all the year 'round than to have a boom for a few months and then drop into a slough of dullness. In regard to the volume of trade generally it has, if bank clearings are a true indication, and they certainly are, almost reached the level of 1892, the year of which we now speak boastingly. The clearings of eighty-one cities for the week ended October 10 reached an aggregate of $1,145,000,000, an increase of three-fourths of 1 per cent, over the preceding week, 23 per cent. over the same week in 1894, 26 per cent. more than for the like week in 1893, and only 3 per cent. less than for the same week in 1892. Another favorable feature of the general condition of things is a decided rise in the price of silver and the satisfaction expressed by the mine operators in the situation. Railroad earnings continue to gain, the movement of grain and ores creating a decided boom in transportation both by water and rail. The increase in the postal business of the country is also a fair gauge of business activity. The receipts of the Post Office Department for stamped paper, which includes stamps, postal cards, stamped envelopes, &c., for the quarter ended September 30 amounted to $18,060,846, against $15,646,521 for the same period last year; $15,969,421 for the same quarter in 1893, and $16 493,555 for the same period of the prosperous year of 1892.

OF late THE JOURNAL has received several inquiries which tend to show a disposition on the part of their writers to engage in new paper making enterprises. Some of these refer to locations, the methods of manufacture, selection of machinery, &c., while yet others relate to the utilization of certain fibres. While we are pleased to note the growing importance of the paper making industry we do not regard the institution of new mills as being so eminently desirable. Undertakings of this kind should be carefully considered, and men who seek to invest capital should understand that there are many things in the economy of paper making which, at this time, may be deterrent, and for this reason it will be wiser not to rush into the business without full understanding of its responsibilities. As to the fibre question we can say only one thing, as we have remarked before, that vegetable fibres generally are adaptable to conversion into paper; but that their characteristics must be such that the product will serve a useful purpose; that they shall cost so little as to compete with existing supplies of paper making material. So much in reply to people not paper makers, but who seem to be anxious to get into the business.

Now that it has been amply demonstrated that the United States can compete with any manufacturing country in the world, and that it only needs organized and systematic effort to secure a satisfactory foothold in any market to which our exporters may turn their attention, there are a few considerations which may well be offered as bearing vitally upon the growth of our commerce with other nations. In consular reports from the Orient, and from South and Central America in particular, it has frequently been made plain how seriously our traders are handicapped for want of banking facilities controlled and operated in the interest of American trade. This is a fine field for some of the idle capital now awaiting an opening, and we would like to see a movement made toward relieving our export trade of the necessity, the serious disadvantage, in fact, of doing business through European financial concerns. Another matter which may well be thoughtfully considered is the establishment of depots for the distribution of American goods. If we would have our trade horn blown to some purpose it must be put in the hands of the American hustler wherever possible. A third matter, involving the success of the other two, is the carrying trade. In this Americans have encountered one of their most serious handicaps. The American flag is again appearing in the transatlantic service, and it has been proved that our shipbuilders are not behind those of any other nation in any respect. It only remains then for capital to assume a more patriotic attitude toward the industrial growth of the country; to relieve our export trade of the humiliation of dependence on foreign financial institutions and foreign ships; this done, the establishment of centres of distribution would, we think, speedily follow.

AN appeal has been made to the British public to "support home industries," the paper trade being used to demonstrate the necessity of doing something to keep out an ever increasing host of invading manufacturers. It appears that Great Britain received in 1894 from outside sources no fewer than 168,681 tons of paper, valued at $13,097,530, which, the statistician reckons, represents a loss in wages to British workmen in the paper trade of $1,125,000, the result of "the replacement of British paper by untaxed foreign paper in our home markets," or, in other words, a loss of employment for the year by 3,000 men. This, however, does not represent the full measure of loss, as it extends to the trade in chemicals, coals and raw material, the amount of coal alone required to manufacture the above specified quantity of paper being estimated at over 350,000 tons. Then these questions are propounded: "Why should this paper come in from abroad free from the home taxes paid by the British maker? and why should the labor which it represents not be utilized for affording employment at home?" Verily, we can see no reason why, unless it is that British publishers and stationers find considerable advantage in buying foreign paper. The chief thing to be noticed in connection with the demonstration of the invasion of English markets by foreign paper is the covert plea for protection, a sentiment in favor of which is growing in the United Kingdom, although there is evident dislike to acknowledge it publicly. Commenting on the situation as above set forth, a London contemporary says: "While the appeal for support of home industries has produced some weighty evidence condemnatory of existing trade laws—not to say interesting, as showing the enormous importation of foreign paper into Great Britain—yet we cannot ignore the fact that machinery, coals and chemicals are exported from this country to firms who send paper to us," all of which helps out the chemical, coals and machinery producers, but does not seem to help the British paper maker even a little bit.

Watermarks.

BY DANDY.

A straw which shows the way in which at least one factor in the paper trade has grown was the sale of a half share of a Holyoke mill on Saturday last. It was of a par value of $500, and yet it brought over $11,000 at auction. That kind of stock beats the kind which is baled every time.

You don't have any claims on it, you know; there is no question of moisture, no allowances for rubber, &c., and in fact it is satisfying all around.

I have been handed a news clipping which tells of the golden wedding of a man in Dalton, Mass. He was at one time in the paper business, but twenty-eight years ago he quit it and became a stone mason. As a result he now has a golden wedding.

It is true that once in a while a man in the paper trade has a golden wedding, but it is capitalized and is printed in gold on the label on the bottle.

A young man who some years ago deserted the West and finally landed in Pennsylvania, and who is at present devoting his energies to selling "super" and raising a crop of frizzled whiskers of a dull brick color, came to New York this week and was taken to a well-known club in the dry goods district to dine by a friend of his. As they sat at the table a hall boy came through the dining room bent on finding some particular man. Finally his eye lighted on the aforesaid "whisks," and going up to the owner of them he said, "Excuse me, but is this Mr. Isaacstein?"

The Pennsylvanian to whom the inquiry was addressed grabbed a table knife to slaughter the boy, but "Buttons" turned and fled. Not satisfied with thus attempting to murder an innocent and knowledge seeking boy, the resident of the Keystone State now buttonholes his friends with the confidential query, "Say, do I look as though my name was Isaacstein?"

A member of the trade submits the following: "Two men in the trade went fishing not long ago. One caught a 6 pound big mouth bass and the other landed five small mouths, but heavy. Who is the better fisherman?"

The statement of the case may be all right, but the query should be, "Which is the bigger prevaricator?" for if they are the fellows I guess they are, neither of them ever caught a fish in his life, except at Fulton Market.

A New York paper gives an up-to-date "Paradise Lost" story as follows:

"Kind lady, give a poor man a little help on his way East."

"Are you an Eastern man?"

"Yes'm; I beat my way Wes' to the Rum River lumber woods, and I'm a-gittin' back."

"What for? Couldn't you get work lumbering?"

"'Twasn't that, mum, but the dern thing was nothin' but water, jes' like any other river."

A writer on paper in a Western newspaper begins this way: "It is now about fifty years since paper was manufactured from straw." That's cheerful. Koops made straw paper in 1800, and that is several more than fifty years ago.

In the course of his remarks he says that some people do not like to use paper made of rags for wrapping up articles of food, because the microbes supposed to be in the rags might taint or contaminate the food. They might, and then again the writer of that article might possess some knowledge of paper making—but he doesn't.

Trade Talks.

Col. A. G. Paine, President of the New York and Pennsylvania Company—How do I find business? Business generally is good with us, and I do not think that the paper trade is going to the "demnition bowwows" yet a while. We are doing a large volume of business, but profits are small. We have the same complaint that others in the trade have to make: we are not making enough money. It has been so in all lines for the past three years. Cause? Overproduction.

Thomas J. Hadley, New York—Up to three years ago we had carried on the business here of dealing in tea papers for years and years, and when business took a slump in the spring of 1893 we, of course, felt it just the same as everybody in the trade; but I presume that we would have felt it more had we not a year and a half ago taken on another line in conjunction with it. Now, we are doing a good business in manilla wrappings. We think that business, on the whole, has improved. This is shown in several ways. When the drought came on, causing manufacturers to shut down entirely or run on part time, we had to scurry around and buy job lots of paper and sometimes we had as high as 70 or 80 tons of job lots come in here at one time. We went all over the country for them. I was going to say from Maine to California, but that would be going too far, as of course we had to keep within freight limits. As soon as we went outside of the distance from which merchandise could be sent to the city profitably, the charges for freights would so cut into the profits that the transaction would not pay. For a long time we picked up much paper in this way, but we cannot do so any longer. We think that this shows that business has improved. Another reason is that prices on manillas have been advanced one-quarter of a cent, while trade is firmer, orders are larger and demand is stronger. This may be only temporary, and how long it will last we cannot tell, perhaps until next January, and it may be permanent and even grow better, but the price cannot go any lower than it did before the increase. Things about reached bottom then. Of course at the bottom of the whole trouble in the trade has been overproduction. When the business depression set in in 1893 many pulp manufacturers found themselves with a stock on hand which they could not dispose of to the paper mills, and many of them put in paper machines of their own and worked up their surplus stock of pulp into paper. This increased materially the number of paper mills and the production of paper. At the same time business in all other lines was poor, so that the paper trade—which is as good a standard by which to measure business as I know of, because its trade is good when trade in other lines is good and bad when it is bad in those lines, by reason of the fact that it comes in contact with all other lines of trade without an exception, and its product is used by all of them—felt the effects in two ways—the production of paper was growing greater and the consumption of paper was becoming smaller every day. The legitimate result happened—the prices of paper dropped all around and trade became generally demoralized. Manufacturers in several lines have seen these and other troubles and have now set about protecting themselves. This is shown in the combinations which have been made, notably by the news men, who have been at the mercy of some papers in whose impositions I presume is to be found the principal reason for its organization. The paper dealers have also seen the error of their ways. About all of them have been touched by the small and impecunious retailer, and profiting by their experience they do not now sell him unless he pays for his order in cash at the time of its delivery.

Changes, Removals and New Firms.

The *Echo*, Rico, Col., is a new paper.

The *Echo*, Wolseley, Assina., is a new paper.

James Moore, printer, Brussels, Ont., has been succeeded by R. Woolsey.

Bell & Watkins, publishers of the *Evening Times*, Scranton, Pa., have sold out to E. J. Lynett.

E. G. Henderson, publisher, Evening Shade, Ark., has sold out to J. C. & E. Southworth.

The Ashland (Me.) *Headlight* is a new monthly, of which James H. Moore is the proprietor.

The *Daily Western Slope*, Grand Junction, Col., is a new paper, edited by Wm. G. Connelly.

Springfield, Ohio, has a new monthly magazine called *Push*, which aims to help the business man.

A new magazine is the *Black Cat*, published by the Shortstory Publishing Company, Boston, Mass.

Hilton & Allen, printers, Lynn, Mass., have dissolved partnership. Mr. Hilton continues the business.

Warren Brothers, publishers of the *Tribune*, Rich Hill, Mo., have been succeeded by George Weymouth.

L. E. Frankforter, publisher, Glasco, Kan., has sold out to E. M. Throckmorton, and removed to Colorado City, Col.

The *Republican*, Davenport, Ia., is a new paper published by the Tri-City Publishing Company, and edited by S. D. Cook.

The *Free Press* and the *Brooks County News*, Augusta, Ga., have been consolidated under the name of the *Free Press and News*.

John L. and John E. Thornton, under the style of Thornton & Son, have opened a book and stationery store at 63 Niagara street, Buffalo, N. Y.

The *Farm Gazette*, Starkville, Miss., is a new publication issued by Dr. Tait Butler and edited by Edwin Montgomery. It is devoted to stock interests.

The *Investor*, Kansas City, Mo., has been purchased by J. C. McManima and Herbert Geddes, who propose to make it a first-class real estate journal.

New York has a new end-of-the-century fortnightly journal called *M'lle New York*, edited by Vance Thompson, and illustrated by Thomas Fleming and T. E. Powers.

Frank Harper has sold his interest in the *Advertiser*, Chillicothe, Ohio, to the *Advertiser* Publishing Company, and will assume the management of the *Banner*, Mount Vernon, Ohio.

Toronto, Ont., has a new monthly trade journal called *Business*, which is devoted to the discussion of practical business questions. It is published by the J. S. Robertson Company, Toronto, Ont.

The *Sunday Free Press*, Scranton, Pa., is now under the control of the administrators of the estate of F. A. Beamish, and is edited by Richard F. Beamish, formerly editor of the Carbondale *Anthracite*.

The *Housekeeper*, Minneapolis, Minn., has been sold to W. E. Haskell & Co., a corporation composed of several prominent Minneapolis publishers, including Lucian Swift, of the *Journal*; W. E. Haskell, of the *Times*, and F. Fayram, formerly of the Detroit *Free Press*.

The Van Publishing Company, New York, has been incorporated to publish magazines and periodicals and to do a general publishing and bookselling business. Capital, $20,000; and directors, Dillon Brown, Fannie M. Brown and Clarence M. Foster, of New York.

Truman H. Aldrich, publisher of the *Age-Herald*, Birmingham, Ala., has sold out to the owners of the *Daily State*, same city, who will discontinue the publication of the latter paper. The *Age-Herald* will retain its name for the present. Joseph Hodgson

will be editor in chief and H. M. Wilson, managing editor.

The *Daily Times*, Wabash, Ind., is a new paper.

Edward Cotter, stationer, Petaluma, Cal., has sold out.

Berwick, Pa., has a new paper called the *Advertiser*.

Fruita, Col., has a new paper edited by J. W. Byers.

Belfast, Me., is to have a new paper called the *Patriot*.

The *South*, Chicago, Ill., is a new monthly magazine.

Libbie L. Fitch, publisher, Tekamah, Neb., has sold out.

Davenport, Pa., has a new paper called the *Republican*.

Reynold & Kasson, publishers, Mariposa, Cal., have sold out.

Toronto, Ont., has a new paper called the *Church Evangelist*.

Uhl Brothers, dealers in wall paper, Oakland, Cal., have sold out.

The *Reflector* Publishing Company, Fort Madison, Ia., has sold out.

Charles A. Morley, publisher, Clyde, Kan., has sold out to J. J. Jones.

E. M. Bates, printer, Beverly, Mass., has sold out to Kehew & Odell.

The *Young Ladies' Magazine*, Buffalo, N. Y., is a new publication.

Tampa and Port Tampa City, Fla., have a new paper called *Opinion*.

The Hartford Publishing Company, Hartford, Wis., has been incorporated.

Frank Noot, printer, New Westminster, B. C., has sold out to H. Morey & Co.

Baker & Kinsey, dealers in wall paper, Newark, N. J., have dissolved partnership.

Frank J. Single & Co. have opened a wholesale paper warehouse at Middletown, Conn.

Hart A. Downer, publisher, Oroville, Cal., has been succeeded by Frank R. Maye.

The St. Louis *Magazine*, St. Louis, Mo., has been sold to the Advance Book Company.

C. A. Brewster, bookseller and stationer, Troy, N. Y., has been succeeded by Brewster & Co.

E. B. Woodworth, publisher, Santa Monica, Cal., has been succeeded by Woodworth & Gillis.

The *Daily Tribune* is a new paper at Owensboro, Ky. F. H. Roberts is the editor.

The *Courier-Herald*, Saginaw, Mich., is a new paper published by Chas. B. Schaefer.

McDougal & McInnis, publishers, Quincy, Mass., have been succeeded by Wm. McInnis & Co.

A. C. Lawrence, publisher, Pelican Rapids, Minn., has been succeeded by J. T. McCulloch.

The *Saturday Herald*, Independence, Ia., is a new paper published by Dunroe & Raymond.

C. E. Glines and J. E. Vandevoort will open a stationery, &c., store at Marietta, Ohio, on or about December 1.

The *Bedford Weekly News* Company, of Brooklyn, has been incorporated to publish the *Bedford Weekly News*. Capital, $5,000; and directors, Arthur G. Bentley, George L. Ogilvie and William S. Macgregor, of Brooklyn.

The W. C. Leffel Company, Springfield, Ohio, manufacturer of turbine wheels, has been reorganized as the Trump Manufacturing Company. J. J. Hoppes, who has been elected president, has taken the interest of W. C. Leffel. Fuller Trump has been elected general manager. The business of the firm is to be broadened.

Failures.

Moses P. Ginsberg, printer, Chicago, Ill., has made an assignment.

C. W. Huntington, printer, New Haven, Conn., has made an assignment.

A. J. Vance, bookseller and stationer, Mt. Vernon, Mo., has made an assignment.

Wm. Wesley, printer, Ridgetown, Ont., has made an assignment to Wm. Davidson.

Horace J. Long & Co., dealers in wall paper, Washington, D. C., have made an assignment.

In Town.

Warren Curtis, Palmer's Falls, N. Y.; W. D. Russell, Turner's Falls, Mass.; S. S. Stevens, North Hoosick, N. Y.; J. W. French, Three Rivers, Mich.; J. P. Lewis, Beaver Falls, N. Y.; L. M. Howland, J. H. Derby and J. E. Howland, Sandy Hill, N. Y.; C. H. Dobilinski, Lambertville, N. J.; John D. Powers, Thomson's Mills, N. Y.; C. D. Brown, Boston, Mass.; G. R. Stewart, Marion, Ind.; E. B. Denison, Portland, Me.; W. F. Whiting, Holyoke, Mass.

Mortgages, Etc.

[In the appended list R. signifies a renewal of a pre-existing mortgage; B. S., bill of sale; T. D., trust deed, and Real, a mortgage on real estate.]

EASTERN STATES.

Mortgagor.	*Amount.*
Martin J. Monahan, Boston, Mass.	$1,000
Terrell Brothers, Boston, Mass. (B. S.)	175
Tilton & Holmes, Haverhill, Mass.	350
E. Russell Frost, Merrimac, Mass.	2,125

MIDDLE STATES.

James M. Van Valkenburgh, Asbury Park, N. J.	1,000
Charles W. Fuller, Long Branch, N. J. (B. S.)	5,000
Evan F. Roberts, Utica, N. Y.	300

WESTERN STATES.

H. M. Baker, Los Angeles, Cal.	200
Benj. B. and Mary E. Herbert, Chicago, Ill.	769
John E. Teal, Indianapolis, Ind.	450
Otto Clemens, Dubuque, Ia.	193
R. L. Brown, Hamburg, Ia.	1,400
R. L. Brown, Hamburg, Ia. (B. S.)	1,400
M. A. Ladd, Marcus, Ia.	800
C. M. Wright, Wapello, Ia.	300
R. Dewitt Russell, Plainwell, Mich.	200
Olden & Bates, Minneapolis, Minn.	285
A. M. Vander Carr, Minneapolis, Minn.	550
The Omaha *News* Publishing Company, Omaha, Neb.	2,000
G. S. Newcomb & Co., Cleveland, Ohio (R.)	1,120
Teofil Krutza, Stevens Point, Wis.	850

SOUTHERN STATES.

A. C. Bell, Westport, Mo.	261

LIENS DISCHARGED.

Reflector Publishing Company, Fort Madison, Ia.	270
John T. Tyler, Salina, Kan. (Real)	500

Fires.

The twine mill of the Empire Cordage Company, Champaign, Ill., was burned on October 17. Loss, $100,000; insurance, about $90,000.

Obituary.

George Millar McGee, the youngest son of James McGee, of G. W. Millar & Co., died suddenly on Wednesday morning of membranous croup after an illness of about twelve hours. He was three years of age. Mr. and Mrs. McGee have the sincere sympathy of a very large circle of friends in their severe bereavement.

Accidents.

George Young, a shipping clerk for the George C. Gill Paper Company, Holyoke, Mass., recently sustained severe injuries to his hands and feet by having them caught between the elevator and a floor of the mill.

A staging on which several men were engaged in building, at the new mill of the Marshall Paper Company, Turner's Falls, Mass., gave way on October 15, precipitating five men the distance of 30 feet. One man was seriously injured internally; the others were more or less bruised, but able to go to their homes.

Personals.

G. M. Mansfield, of Train, Smith & Co., sailed for Europe last Wednesday on the Majestic.

Thomas Griffiths, of Thomas Griffiths & Co., Manchester, England, was in New York this week.

A. Pagenstecher, of the Hudson River Pulp and Paper Company, who has been across the water all of the summer, reached home on Thursday.

At the annual meeting of the Pullman Palace Car Company at Chicago, October 16, Henry C. Hulbert, of H. C. Hulbert & Co., was re-elected a director.

Market Review.

OFFICE OF THE PAPER TRADE JOURNAL, FRIDAY, October 18, 1895.

THE MONEY MARKET.—The stock market was not particularly active, and the very great majority of moving shares closed at lower figures. Call loans on stock collateral ruled steady in tone at an average rate of 2@2½ per cent. at the Stock Exchange, and only slightly higher in the outside market. The demand for time loans was not active. Quotations were as follows where collateral offered was choice: 2@2½ per cent. for thirty days, 2½@3 for sixty to ninety days, 3½ for four and 3½@4 for five to seven months. Business in commercial paper is light. The supply offering is not large, but the assortment is good. Quotations are 4¼@5 per cent. for sixty to ninety day indorsed bills receivable, 5@5½ per cent. for four months' commission house and prime four months' single names, 5¼@6 per cent. for prime six months' and 6@7½ per cent. for good four to six months' single names. The market for sterling and continental bills was firm at a slight advance. Posted rates were $4.88½ for sixty days and $4.89½ for sight. Actual rates were $4.87½@4.87¾ for sixty days and $4.88½@4.88¾ for sight.

THE PAPER TRADE.—Matters go along in the paper market in a routine way. As a rule mills are fairly supplied with orders, and News mills have product well covered by orders, as have Manilla mills, the more especially those in the latter line making low and medium grades. Several manufacturers in the News line have been in town this week, and to-day there were conferences on matters connected with the combination, but there is nothing new in the matter. The directors of the Standard Straw Board Company held their quarterly session here this week, and the executive committee of the National Pulp Board Company were also in session. The Strawboard dealers of the East have formed an organization which will act in concert with both of the companies named.

JUTE BUTTS.—There is nothing doing in the Jute Butt market. Supplies at Calcutta are said to be plentiful, but the cost of import, ranging from 1 1-16@1.10c., is too high to meet the requirements of consumers here.

WOOD PULP.—There continues to be a steady call for Ground Wood, and with water low the market remains in an unchanged condition, with prices firm.

WOOD FIBRE.—There is a fair call for Chemical Fibre. Domestic Bleached Soda is quoted at 1.95@2c. Domestic Sulphite is quoted at 1½@2¼c., as to quality, for Unbleached, and 3c. for Bleached. Foreign grades are quoted as follows: Unbleached Pine, soda process, 2.05@2½c.; Bleached, same process, 2.30@3¼c.; Unbleached, sulphite process, 2.05@2.55c.; Bleached, do., 3@3¾c.; Bleached Straw Pulp, 3.80c. This week there were imported at New York 230 tons of Chemical Fibre, being 90 tons from Antwerp, 25 tons from Dundee, and 115 tons from Hamburg.

FOREIGN RAGS AND PAPER STOCK.—The market for foreign rags has not woke up yet to any appreciable extent. The cargo of Japanese Blues, the sale of a portion of which was reported last week, has now been cleared out and the only supplies of this character now here are 4,000 bales in store, for which 1.50c. is asked. The hardening of prices of Blue Cottons noted last week continues, and we note a sale of 50 tons at 1.20c. Imports for the week aggregated 1,422 bales and 230 tons, being 613 bs. rags, 230 tons chemical fibre and 799 bs. manillas. Ports of shipment and quantities were as follows: Antwerp, 90 tons chemical fibre; Calcutta, 400 bs. manillas; Dundee, 25 tons chemical fibre; Hamburg, 332 bs. rags, 115 tons chemical fibre and 279 bs. manillas; Havre, 69 bs. rags; Hull, 41 bs. rags; London, 99 bs. rags, 120 bs. manillas; Stettin, 72 bs. rags.

DOMESTIC RAGS.—There is a fair call for domestic rags, but the market is without special features.

BAGGING, &c.—The market for Gunny is very quiet, and the nominal quotation is 90c., while in Mixed Bagging there has been a sale of 80 tons at 82½c. Manilla Rope has been moving somewhat, and we note a sale of 300 tons in lots at 1.97½@2c. Wool Tares are quiet and are quoted at 1.10c. Imports of manilla stock at the port of New York for the week aggregated 799 bales, being 400 bs. from Calcutta, 279 bs. from Hamburg and 120 bs. from London.

OLD PAPERS.—There continues to be a steady demand for low grades. We quote: No. 1 Hard White Shavings, 2.15@2½c.; No. 1 Soft White do., strictly free from wood, 2@2.05c.; Soft White, do., ordinary, 1⅞@2c.; Old Ledgers, 1⅞c.; Solid Printed Books, 1¾c.; Mixed Shavings, No. 1, 1@1½c.; Mixed Shavings, No. 2, ¾c.; Extra No. 1 Manillas, 90c.; No. 1 Manillas, ordinary, 75c.; No. 2 Manillas, 60c.; Light Book Stock, 60c.; Folded News (overissues), 50@55c.; Mixed Papers, 35c.; Commons, 25@30c.; Straw Clippings, 45c.; Binders' do., 45c.

STRAW.—Straw was quiet. We quote: Long Rye at 55@65c.; Short Rye at 40@50c.; Wheat at 35@45c.; Oat at 40@45c.

ROSINS.—There was a limited business in the Rosin market. We quote: Common to Good Strained, $1.77½@1.82½; E, $1.90; F, $2; G, $2.05@2.07½; H, $2.15; I, $2.20; K, $2.42½@2.45; M, $2.80; N, $3.20@3.25; W G, $3.50@3.55.

CHEMICALS.—The market for paper makers' chemicals is quiet. In Bleaching Powder there have been large sales of contracts for 1896. On spot the supply is very nearly exhausted and prices remain firm. Sales of Alkali over next year have been large and there has been a fair business in lots for prompt delivery. Caustic Soda is moving quite freely. During the week there have been sales of Bleach at 1.87½@1.95c.; Soda Ash at 1¾c.; Caustic Soda, 2.10@2.20c., and Alkali, 1@1.05c.

CHINA CLAY.—Limited supplies keep the market firm, but as the consuming demand is not urgent, and recent arrivals have supplied immediate wants, there is no quotable improvement in prices. Buyers do not seem to be disposed to anticipate their needs, and we hear of little doing in futures. We continue to quote $11@17, for English and $8@10 for domestic, as to quality and quantity.

TWINES.—There is a fairly steady call for stock. We quote: Sisal Hay Rope, 5½c.; Sisal Lath Yarn, 5c.; Jute Ready, 5@6c. Twines—Jute, 18, 10½@11c.; 24,10@10½c.; 36, 9@9½c.; Jute and Hemp, 18, 13@14c.; 24, 12½@13½c.; 36, 12@13c.; Hemp, 18, 16c.; 24, 15½c.; 36, 15c.; Marlines, Jute, 4½, 9c.; 6, 8½c.; 8, 7½c.; Jute and Hemp, 6, 11c.; 8, 9c.; American Hemp, 4½, 14c.; 6, 13c.; 8, 12c.; Russian Hemp, 4½, 14c.; 6, 13c.; 8, 12c.

COAL.—Since the last review prices have remained strong, and the market is steadily improving its condition.

EDWIN BUTTERWORTH & CO.,
MANCHESTER, ENGLAND,
PACKERS OF ALL KINDS OF
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The Largest Manufacturers of Paper Makers' Felts in the World.
Our wet machine or pulp felts are *unequaled* for *durability*.
For WRITING and LEDGER PAPERS We warrant a felt equal to anything imported.

PRICES CURRENT.

NEW YORK MARKET.

Paper Market.

DEALERS' SELLING PRICES.

Ledger and Record	$0.16	@	$0.21
Flat Caps, superfines	11½	@	14
Flat Caps, fines	11	@	13
Flat Caps, engine sized	7	@	9
Blotting, American	8	@	12
Blotting, English	17	@	....
Book, super sized and calendered	5	@	8
Book, super sized and tinted	5	@	8
Book, extra machine finish	5	@	....
Book, machine finish, low grade	4½	@	5
News	2¾	@	3
Poster	3	@	....
Hanging, superfine, No. 1	8	@	10
Hanging, superfine, No. 2	6	@	8
Hanging, machine satin	4	@	4½
Hanging, white blank, No. 1	4	@	4½
Hanging, curtain	3½	@	4
Hanging, brown	2½	@	2
Colored papers, double mediums	6½	@	8
Colored papers, glazed medium	7½	@	8½
Colored papers, tobacco	8½	@	9½
Colored papers, tissues, 20×30, ℔ ream	1.10	@	1.35
Tissues, black, 20×30, ℔ ream	1.40	@	1.50
White tissue, 20×30, ℔ ream	60	@	80
Manillas, Flour sack, cream	10½	@	....
Manillas, Flour sack, drab	9½	@	11
Manillas, Rope, unbleached No. 1	9½	@	11
Manillas, Rope, unbleached No. 2	7½	@	9
Manillas, No. 1, light weight	6½	@	6¾
Manillas, No. 1, heavy weight	6¾	@	6¾
Manillas, No. 2	5	@	6
Manillas, Bogus	2¾	@	3½
Wrapping Parchment	16	@	....
Tissue Manillas, full count, weight and size, 24×36, other sizes in proportion	55	@	60
Hardware, light colored, No. 1	4½	@	....
Hardware, No. 1, glazed, tarred	4½	@	....
Hardware, No. 1, glazed	4	@	....
Binders' Boards, ℔ ton, No. 1	70.00	@	90.00
Binders' Boards, ℔ ton, No. 2	30.00	@	40.00
Strawboards, air dried, No. 1, ℔ ton	40.00	@	....
Strawboards, steam dried, No. 1, ℔ ton f. o. b. mill	....	@	....
Straw Wrapping, basis, 15×20, 15½ lbs., 20 sheets—			
20×40, from 38 to 42 lbs. ℔ rm	65	@	....
20×40, from 30 to 34 lbs. ℔ rm	....	@	52
24×36, from 24 to 26 lbs. ℔ rm	....	@	48
22×32, from 24 to 26 lbs. ℔ rm	45	@	....
20×30, 21 lbs., ℔ rm	....	@	34
20×30, from 14 to 17 lbs. ℔ rm	26	@	....
16×22, from 12 to 13 lbs. ℔ rm	22	@	....
18×28	....	@	24
15×20, 10 lbs. ℔ rm	....	@	17
15×20, from 7 to 8½ lbs. ℔ rm	....	@	13
14×18	....	@	12
12×16	....	@	11
11×15	....	@	10
Straw Wrapping, ℔ lb., heavy weight	1.75	@	1.85
Straw Wrapping, ℔ lb., light weight	1¾	@	....
Cigarette, Straw Tissue, per case of 100 boxes, 50 books to the box, 200 sheets to the book	21.00	@	30.00
Tea Papers, 16 sheet quires—			
12x18	....	@	14
14x20	....	@	18
Card Middles, ground wood	5½	@	6½
Card Middles, long fibre wood	8½	@	9
Card Middles, rag and wood	6	@	9
Pulp Lined Boards, single manilla, No. 100 and heavier	42.50	@	...
Pulp Lined Boards, double manilla, No. 100 and heavier	47.50	@	...

Rags, Rope and Bagging.

White Shirt Cuttings, No. 1	4¼	@	....
Mill Assorted Whites	3½	@	3¾
Unbleached Muslins	4½	@	4¾
City Whites, No. 1	3	@	3¼
New Seconds, light	2½	@	....
New Seconds, dark	1¾	@	2
No. 2 Whites	¾	@	1.15
Cotton Canvas, No. 1	3	@	....
Linen Canvas, No. 1	....	@	2¼
Country Mixed, free of Woolens	60	@	...
Seconds (City)	....	@	....
Colors, ℔ 100 lbs	....	@	....
Manilla Rope	....	@	2
Manilla Rope, tarred	....	@	....
Gunny Bagging, No. 1	1.10	@	1.20
Mixed Bagging, No. 1	⅞	@	1
Burlap Bagging, No. 1	1.10	@	1.15
Kentucky Hemp Bagging	....	@	....
Tar Shakings	1	@	....
Hemp Twine Stock	....	@	....
Jute Waste	¾	@	1¼

Shavings and Old Paper.

White Collar Cuttings	3	@	....
White Envelope Cuttings	3½	@	....
Hard White Shavings, No. 1	2¾	@	3
Soft White Shavings, strictly free from wood	2.15	@	....
Soft White Shavings, ordinary	1⅞	@	....
Mixed Shavings, part white	1	@	1½
Ledger and Writing	2	@	2.
Solid Stock	....	@	1¾
Book Stock, No. 1 light	....	@	1½
Old Newspapers	40	@	....
Manillas No. 1	....	@	1.15
Manillas No. 2	80	@	....
Mixed Manillas	60	@	....
Hardwares, No. 1	65	@	....
Mixed Papers	40	@	....
Commons	25	@	30
Binders' Board Cuttings	50	@	....
Strawboard Cuttings	45	@	50

English Rags, &c.

New Cuttings, cotton	5	@	5⅛
London Fines, cotton	3¾	@	4
Outshots, cotton	2¾	@	3
Seconds	1⅝	@	1.65
Thirds	1¼	@	1⅜
New Print Tabs	2¼	@	3
Checks and Blues	2⅛	@	2¼
Light Prints	1⅝	@	1¾
Light Fustians	2	@	2¼
Dark Fustians	1¾	@	1⅞
Black Calicoes	1½	@	1¾
First Canvas Linen	3½	@	4
Second Canvas Linen	3	@	....
Gunny Bagging, No. 1	1	@	1.02½
Mixed Bagging, No. 1	80	@	85
Burlaps Bagging, No. 1	....	@	1.20
Rope, Manilla	1.95	@	2
Rope, Manilla, tarred	....	@	2
Jute Threads	....	@	1¾
Clean Jute Ropes	2	@	2¼
Mixed Rope	1½	@	1¾
Flax Tow	1¼	@	1½

English Old Papers and Shavings.

Hard Shavings, No. 1	2	@	....
Soft Shavings, No. 1	2¼	@	2¾
White and Colored Shavings, No. 1	1¼	@	1½
White and Colored Shavings, No. 2	1	@	1¼
Cream Post Shavings	2½	@	....
Paper Collar Cuttings	....	@	2
Briefsand Letters	1½	@	1¾
Books and Pamphlets	1.10	@	....
Old Newspapers	....	@	....
Broken News and Letters	⅞	@	1
Old Blank Books	2¼	@	2½
White and Buff Railway Sheets	1¼	@	....

Japanese Rags.

Blues, Hiogo, ex store	1.30	@	....

Chemicals, Coloring Materials, &c.

Alkali, 58 ℔ cent	1	@	1.10
Alum, lump	1.65	@	....
Alum, ground	1.75	@	....
Alum, Keystone	1⅜	@	¾
Alum, Diamond	....	@	2½
Alum, pearl	2⅜	@	2¾
Alum, porous	2⅜	@	2½
Alum, Merrimac porous	2	@	....
Aluminous Cake	....	@	1¾
Anti-Chlorine	....	@	2¾
Bichromate Potash, American	....	@	10
Bleaching Powders, spot	1⅞	@	....
Cambridge Ochre	11.25	@	....
Caustic Soda, 60 ℔ cent	2.30	@	2.80
Clay, China, English, ℔ ton	12.50	@	17.00
Clay, China, "Star"	12.50	@	....
Clay, China, "Keystone"	10.75	@	....
Clay, South Carolina, ℔ ton	9.50	@	10.00
Clay, Terra Alba, French, ℔ cwt	1.00	@	1.12½
Clay, Terra Alba, American, No. 1	90	@	1.00
Corn Starch	3	@	3½
Copperas, American	....	@	80
Extract Logwood	9½	@	....
Mineral Pulp	10.35	@	....
Orange Mineral	....	@	9½
Potato Starch	4½	@	4¾
Prussian Blue, dry	20	@	35
Prussiate Potash, American	....	@	24½
Rosins, common to good strained, ℔ bbl	1.77	@	1.82½
Rosins, E, ℔ bbl	....	@	1.90
Rosins, F, ℔ bbl	....	@	2.00
Rosins, G, ℔ bbl	2.05	@	2.07½
Rosins, H, ℔ bbl	2.15	@	....
Rosins, I, ℔ bbl	2.30	@	....
Rosins, K, ℔ bbl	2.24½	@	2.45
Rosins, M, ℔ bbl	2.80	@	....
Rosins, N, ℔ bbl	3.20	@	3.25
Rosins, W G, ℔ bbl	3.50	@	3.55
Sal Soda	1.10	@	....
Soda Ash Caustic, 48 ℔ cent	1.60	@	1.65
Soda Ash, carbonated, 48 ℔ cent	1.57½	@	1.70
Soluble Blue	40	@	55
Spanish Brown	½	@	1
Sugar Lead, white	12	@	....
Sugar Lead, brown	7	@	....
Sulphate of Alumina	....	@	2½
Sulphuric Acid, 66 ℔ cent	1	@	1¼
Ultramarine, blue	14	@	17½
Venetian Red	1	@	1½
Vitriol, blue	5½	@	5¾
Yellow Ochre Rochelle	1.35	@	1.50

BOSTON MARKET.

Paper Stock.

White Rags, No. 1	3¾	@	4
No. 2 Whites	2¾	@	2¾
Common Seconds	2	@	2½
Thirds and Blues	1¾	@	1¾
Southern Mixed Rags	80	@	90
Colors, country	½	@	¾
Colors, city	25	@	30
New Calicoes, light	1¾	@	....
New Calicoes, dark	1	@	1¼
Shirt Cuttings, best	3¾	@	4¼
Shirt Cuttings, good	3¼	@	3¾
Shirt Cuttings, unbleached	3½	@	3¾
Shirt Cuttings, unbleached No. 2	2	@	2¼
Shirt Cuttings, cheviots	2¾	@	2¾
Overall Cuttings, blue	2¼	@	2¾
Overall Cuttings, brown	1¾	@	1⅞
Shoe Rags, bleached	3¼	@	3¾
Shoe Rags, unbleached	3¼	@	3½
Shoe Rags, brown	2¾	@	2¾
Cotton Flannels, bleached	3	@	3½
Cotton Flannels, unbleached	3½	@	3¾
Corset Rags, drab	3½	@	4
Corset Rags, white	4	@	4½
Tailors' Seconds	1½	@	1¾
Tailors' Colors	20	@	25
Cotton Canvas	2¼	@	2¾
Cotton Canvas, No. 2	1½	@	1¾
Linen Canvas	1½	@	1½
New Canvas Cutting	3¼	@	3½
Insole Canvas	3	@	3½
Print Papers, best	35	@	40
Folded News	50	@	....
Old Waste Papers	25	@	30
Manilla Paper, No. 1	1.10	@	1.05
Manilla Paper, good mixed	85	@	95
Manilla Paper, blues	65	@	....
Mixed Book Stock	95	@	1.00
Books and Pamphlets	1.10	@	1.15
Book Stock, light	70	@	75
Ledgers and Letters	1.80	@	1¾
Soft Book Shavings	1¾	@	2¼
Hard White Book Shavings	2¼	@	2¾
Leather Board Chips	70	@	75
Straw Chips	35	@	40
Shivey Bagging	1¾	@	1⅝
No. 1 Factory Bagging	95	@	1.00
Burlap Bagging	1.00	@	....
Burlap Bagging, large pieces	1⅞	@	2
Kentucky Bagging	1	@	....
Mixed Bagging	⅝	@	¾
No. 2 Bagging	½	@	⅝
Shakings, soft	⅜	@	½
Tarred Shakings	1	@	1¼
Standing Rigging	2½	@	2¾
Standing Rigging, foreign	2½	@	2¾
Bolt Rope	2	@	2.05
Oakum Junk, No. 2	1½	@	1⅝
Tarred Paper Junk	1¾	@	1⅞
Tarred Paper Junk, inferior	¾	@	⅞
Manilla Rope	1¾	@	1⅞
Tarred Manilla	1¾	@	1½
Hemp Strings	1	@	1¼
Sisal Strings	1.10	@	1.20
Wool Strings	....	@	1
Flax Tow	¾	@	⅞
Flax Waste	¾	@	⅞

Chemicals.

Alkali	85	@	1.00
Aluminous Cake, currency	1¾	@	1¾
Alum, American ground	1.65	@	1.70
Alum, American lump	1.60	@	1.65
Anti-Chlorine	2	@	2½
Bichromate Potash	....	@	10
Bleaching Powder	1.82½	@	2
Caustic Soda, 74 ℔ cent	2.10	@	2.20
Clay, English, ℔ ton	13.00	@	17.00
Clay, American, ℔ ton	10.00	@	11.00
Copperas, ℔ lb	45	@	47
Extract Logwood	5½	@	10½
Lime, Rockland, ℔ bbl	85	@	90
Prussian Blue, ℔ lb	30	@	88
Prussiate Potash, yellow	18	@	18½
Prussiate Potash, red	36	@	37
Rosin, common strained, ℔ bbl	1.90	@	2.50
Rosin, Medium	2.20	@	3.00
Rosin, extra pale, ℔ bbl	3.00	@	4.50
Sal Soda, ℔ lb	65	@	70
Soda Ash, 48 ℔ cent. caustic	1.30	@	1.50
Soda Ash, 48 ℔ cent. carbonated	90	@	1.00
Soluble Blue	2.50	@	3.50
Sugar Lead, white	8¼	@	....
Sugar Lead, brown	5¼	@	5½
Sulphuric Acid, 66°	¾	@	1¾
Terra Alba, ℔ ton	9.00	@	15.00
Ultramarine, ℔ lb	7	@	25
Venetian Red, ℔ lb	1¾	@	2⅞
Vitriol, Blue	3¾	@	4
Yellow Ochre	½	@	1

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Twenty-five words or less, one dollar each insertion. Over twenty-five words, four cents a word each insertion, up to eighty words. Cash should accompany order.

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Answers can come in our care and will be promptly forwarded without extra charge.

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WANTED—POSITION AS SUPERINTENDent in manilla mill; thoroughly understands manillas; good references; now open for engagement. Address No. 1 MANILLAS, M. S. H., care Paper Trade Journal.

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One New Improved 88 inch Drum Winder.
One Gun Metal Couch Roll, 16 x 76 inches.
One 16 Dryer 72 inch Fourdrinier Machine, with cone drive.

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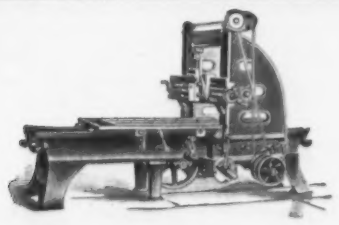
NOTICE.

My attention having been called to the fact that certain parties are infringing certain Letters Patent granted to me, to wit: No. 212,866, dated March 4, 1879, covering a new form of carpet lining, and No. 235,698, dated December 21, 1880, covering the method of and apparatus for making the same, this is to notify all such persons, whether manufacturers or dealers, that any infringement of either of said patents will be prosecuted to the full extent of the law. MOSES NEWTON, Patentee.



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IRON WORKING MACHINERY.

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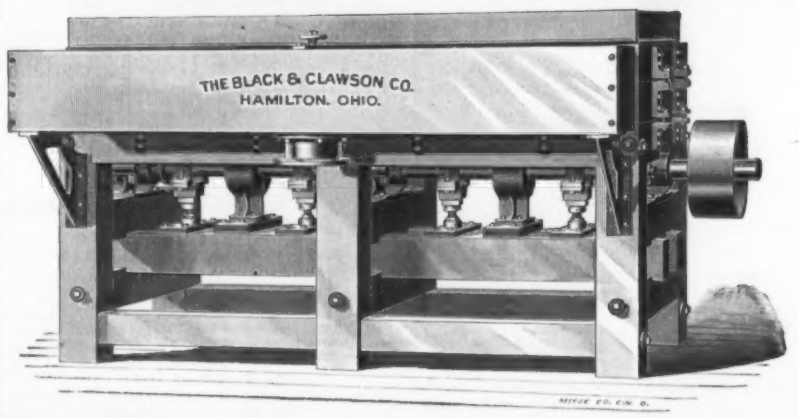

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MEDAL AWARDED AT WORLD'S FAIR FOR OUR SEAMLESS DRYER.

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One 82 inch Fourdrinier machine complete, with press rolls; nine 36x78 inch dryers; stack of chilled rolls; reel, cone pulley cutter; Marshall driving train; made in 1887 and used three years.

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One 74 inch double cylinder machine, consisting of screens, two molds, 30x74 inches; first and second presses; wood and iron rolls; fifteen iron dryers, 36x72 inches; stack of nine chilled rolls, revolving reel, slitter and winder, with Marshall driving train.

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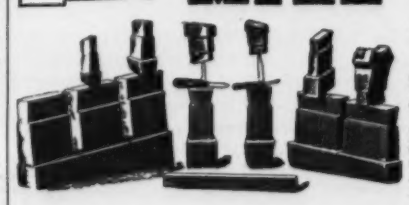

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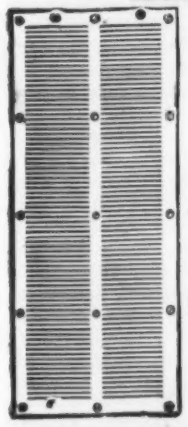

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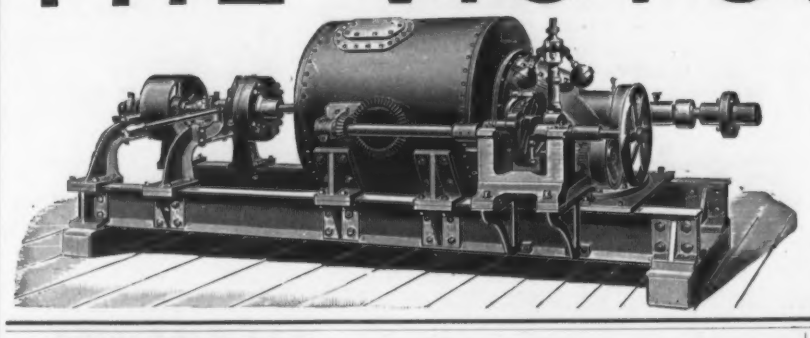

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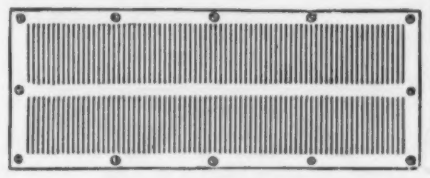

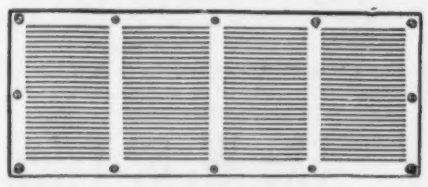

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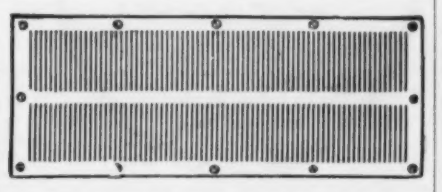

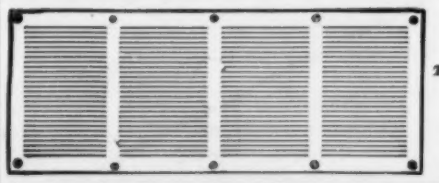

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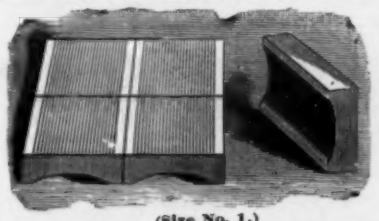

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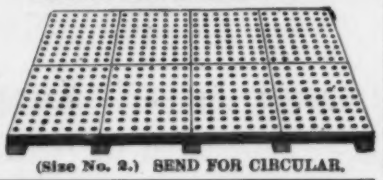

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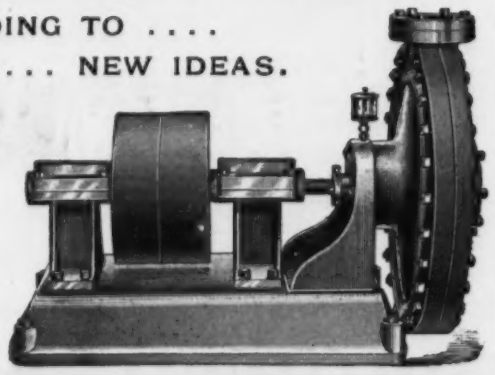

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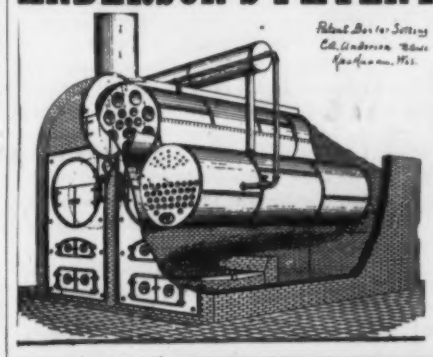

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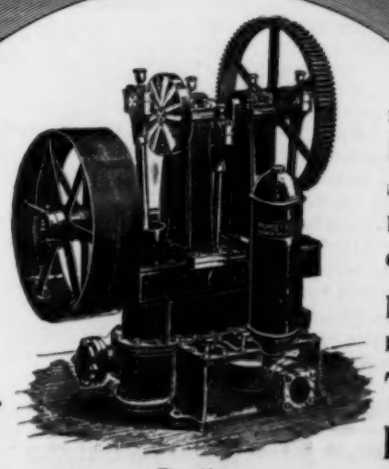

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Send for Catalogue and Prices. Correspondence Solicited.

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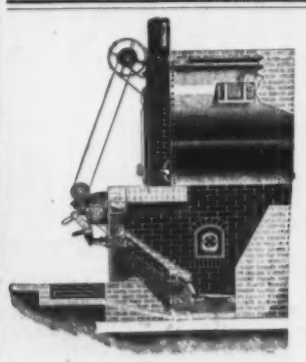
SEND FOR ILLUSTRATED CATALOGUE.

INTERIOR OF PULP MILL FOR THE MANUFACTURING INVESTMENT CO., AT MADISON, ME.

The above illustration is taken direct from a photograph and shows the interior of a Pulp Mill designed and built by us for the Manufacturing Investment Co., at Madison, Me. The photograph is taken in the basement, so as to show the construction of the iron posts and iron girders supporting the floors. The entire framework of the building is made of iron, and the heavy loads of pulp, paper, &c., are carried entirely by these iron posts and girders. The building is enclosed by a light brick wall placed between the iron posts.

OFFICE AND WORKS: EAST BERLIN, CONN.



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SOLE MANUFACTURERS OF THE

Brightman Mechanical Stoker

FOR STEAM BOILERS,

THE MOST ECONOMICAL IN FUEL and the Best Device in the World for Preventing Smoke.

Manufacturing News.

EASTERN STATES.

The Fall Mountain Paper Company, Bellows Falls, Vt,, had $1,500 worth of paper stock destroyed by spontaneous combustion on October 3.

The Diamond Machine Company, Providence, R. I., reports that it has had a good demand for its knife grinders this fall, and that the call for its regular line of polishing and grinding machinery has been very gratifying.

Ground has been purchased for a new factory at Bridgeport, Conn., and the work of building, it is said, will begin soon. The purchaser, a concern now reported to be doing business in New York, will manufacture building paper, and is said to have a capital of $150,000.

A 125 horse power Westinghouse steam engine has been put in place at the Smith Paper Company's Columbia Mill, Lee, Mass.

A number of capitalists at Lewiston, Me., have purchased the power at Crooked Rips, 6 miles above that city, and will improve it. There is a fall of 20 feet in a mile. It is probable that a pulp mill will be built there.

Spaulding & Shepley's pulp mill, West Derby, Vt., has been entirely shut down for a month on account of low water.

The Hadley & McDonald Machine Company, Shelton, Conn., has shipped one of its 4 foot barkers to the Piedmont Pulp and Paper Company, Piedmont, W. Va., and this was to be started up this week.

The Berlin Iron Bridge Company, East Berlin, Conn., has just completed a highway bridge over the Still River at New Milford, Conn. This bridge has one span of 170 feet, with a roadway 20 feet wide in the clear, and is 105 feet above the bed of the river.

MIDDLE STATES.

The Niagara Paper Mills Company, Lockport, N. Y., has secured the right to manufacture a recently invented product, which is intended to take the place of haircloth, being, it is said, both warmer and cheaper and holding up quite as well, even when wet. The outside will be of wood pulp in paper form, pressed upon a centre of muslin. The process for making it will be patented.

The paint manufactured by the Ticonderoga Waterproof Paint Company, Ticonderoga, N. Y., for paper mill use, is meeting with a ready sale. It seems to possess the properities readily appreciated by those who want the best for a special purpose.

The Niagara Falls Hydraulic Power and Manufacturing Company, recently contracted with James Leffel & Co. of Springfield, Ohio, for four of their improved double discharge horizontal shaft water wheels, to be of 8,000 horse power capacity, under a maximum head pressure of 218 feet, which is by far the highest head under which turbines of large capacity have ever been applied in this country or elsewhere. These wheels will drive eight electrical generators, which will be connected direct to the horizontal turbine shafts without gears or belting, the wheels and generators all running in vertical planes. This is the second large order for turbines built by James Leffel & Co. for Niagara Falls, there being already several of this make of wheel, each of 1,200 horse power, in daily operation in the Cliff Paper Company's mills, located at the cliffs, near the tunnel. This water wheel company is also building four of its "Cascade" wheels for one company, to be operated under 730 feet head, part of the power to be electrically transmitted by connecting the wheel shaft directly to the generators. The "Cascade" wheel is, however, essentially and entirely different in construction and operation from the turbine, being in principle an impulse and reaction wheel. This "Cascade" wheel plant will have an aggregate capacity of 600 horse power.

The old Stone Paper Mill, near Chatham, N. Y., the property of John H. Spelman, is to be sold in default of taxes. The walls only are left standing, the machinery is going to ruin, and the entire plant is in a useless condition.

Workmen are clearing away the débris of Moyer & Pratt's paper mill at Greig, N. Y., which was destroyed by fire some time ago, and preparations are being made to rebuild the mill next season.

The York Card and Paper Company, York, Pa., has just placed its six color printing machine in position and will set up another twelve color machine in a few days.

Isaac Hoffman's Silver Lake Paper Mill, at Gibsonville, N. Y., has been sold and will be converted into a bicycle factory.

WESTERN STATES.

The Western Paper Board Company is about to build a mill for the manufacture of strawboard at Chicago, Ill. The mill will be located in the heart of the stock yard district on a plot of land 184x200 feet. The buildings now on the land are being removed in order to make room for the new mill. The plant will have a daily capacity of 50 tons of board, but will be so arranged as to enable the output to be increased to 100 tons.

The Botsford Paper Company, Kalamazoo, Mich., has placed an order for a 90 inch Fourdrinier machine with the Rice, Barton & Fales Machine and Iron Company, of Worcester, Mass.

The Briggs Boiler Company, Akron, Ohio, closed a contract recently for two of its largest sized rotary globe boilers, to be shipped to the Fuji Paper Company, Tokio, Japan.

The American Straw Board Company, Circleville, Ohio, has been indicted for polluting the Scioto River and the Ohio and Erie Canal.

The American Straw Board Company has abandoned its mill at Tiffin, Ohio, which had been idle for more than a year, because of complaints that refuse from the mill killed the fish in the Sandusky River.

Proceedings have been taken by the city of Anderson, Ind., to enjoin the Consumers' Paper Company, Muncie, Ind., and the West Muncie Straw Board Company, West Muncie, Ind., from dumping refuse from their mills into the White River.

A large paper box factory is to be established at Racine, Wis., by Ritchie & Co., of Chicago, Ill.

The board of health of Lima, Ohio, has prohibited the American Straw Board Company from dumping the refuse from its mills into the Ottawa River. The manager of the mill claims that the sewage from the city is responsible and that the mill refuse is a disinfectant; besides which the mills pump into the river 1,000,000 gallons of pure water daily.

SOUTHERN STATES.

The Maryland Clay Company, Baltimore, Md., is turning out a superior grade of clay adapted to paper makers' use. Its mines are located at North East, Md., on the main line of the Pennsylvania Railroad between Baltimore and Philadelphia, giving facilities for shipping to all parts of the country. Mr. Beebe, salesman for the company, is meeting with excellent results in the New England States.

The Linton Coated Paper Company, Richmond, Va., has got its works in operation, and is now manufacturing lithograph and coated papers, cardboard, box papers, enameled blotting, &c.

CANADA.

W. H. Ross & Co. are rebuilding their mill at Sherbrooke, Que, which was recently destroyed by fire.

F. H. Clergue, representing the Sault Ste. Marie Pulp and Paper Company, Sault Ste. Marie, Ont., has been in Port Arthur, Ont., examining the Kakabeka Falls, with a view, it is said, to their development.

General Notes.

J. W. French, J. P. Lewis, J. D. Powers, G. R. Stewart, R. B. McEwan, C. D. Brown and E. B. Denison, composing the executive committee of the National Pulp Board Company, held a session in New York this week, and had conferences with the directors of the Standard Straw Board Company and with representatives of the dealers' new association formed this week. The meeting adjourned on Thursday to meet again the third week in next month.

The Bengal jute crop appears to promise little or no variation from that of last year. The total area sown is about 2,268,200 acres, against 2,264,300 acres sown last year, a slightly increased acreage. Dry weather, or rather a deficient rainfall, somewhat affected the crop in its earliest stages, but later there seemed to be a recovery, and the present expectation is that the amount for export will be the same as was exported from last season's crops—3,600,000 bales.

A case containing 150,000 sheets of paper with gold bronze borders fell from a truck at Broadway and Canal street, New York, about 5.30 o'clock on Thursday afternoon. The case broke and the paper was dumped in a pile on the pavement. Before the truckman could patch up the box about a third of the paper had been blown away or carried off by passers-by and ragpickers, in spite of the presence of a policeman. The paper which the truckman succeeded in saving was more or less soiled.

The Eastern dealers in straw and pulp boards this week started the formation of a dealers' organization which shall protect the interests of dealers in all directions. G. L. Jaeger, of G. L. Jaeger & Co., was elected president, and Mr. Barry, of H. A. Butterfield & Co., was elected secretary and treasurer. Constitution and by-laws were adopted, and the firms included in the membership are the regular agents of the Standard Straw Board Company and the National Pulp Board Company, such as D. J. O'Connell, Spaulding & Tewksbury, of New York and Boston; H. A. Butterfield & Co., G. L. Jaeger & Co., New York Straw Board Company, H. M. Robertson & Co., Robertson & Miner, Henry Lindenmeyr & Son, C. D. Brown & Co., &c. A meeting of the organization will be held about the middle of next month.

Legal Decisions.

[SPECIALLY REPORTED FOR THE PAPER TRADE JOURNAL.]

Fraudulent Disposal of Mortgaged Goods.—The fact that a chattel mortgage has been recorded does not necessarily prevent a disposal of the mortgaged property by the mortgagor with intent to defraud the mortgagee, on the ground that the mortgage being a matter of public record the purchaser took the goods with notice of the existing rights of the mortgagee.—*Thorton v. State* (*Ct. Crim. App. Tex.*), *31 S. W. Rep. 372* (59).

Application of Assets of Insolvent Partnership.—The rule is that, where a copartnership is insolvent, a court of equity, when its powers are invoked to that end in a proper proceeding, either by a member of such copartnership or by a copartnership creditor, will apply the assets of the copartnership to the payment of the firm debts to the exclusion of the debts of the individual partners. This rule is based on the legal presumption that the creditors of a copartnership have given credit to the firm on the faith of the copartnership assets and business, while the debts of the individual members of the firm were contracted on the faith of the individual responsibility and property of the members. And when the affairs of an insolvent copartnership come to be settled by a court of equity it will apply the assets in accordance with such legal presumptions A partnership is a distinct entity, having its own property, debts and credits. For the purposes for which it was created, it is a person, and as such is recognized by the law. And a copartnership, even though in failing circumstances, has the right to pay a part of its creditors in full, to the exclusion of others, so long as such payments are made with an honest purpose. The creditors of a copartnership, merely because they are creditors, are not given a lien by law upon its assets, whether the firm be solvent or insolvent. If they were, it would be impossible for the copartnership to transact business, as every person who purchased any part of its property would take the property purchased subject to such liens. Nor are the assets of a copartnership, even though insolvent, held in trust by the members of the copartnership for the payment of firm debts. A copartnership may sell, convey, incumber and dispose of its property in the same manner that an individual may; and the copartnership assets may be levied upon and sold for the payment of the debts of the copartnership, or for the payment of the debts of all the individual members of the copartnership, in the same man-

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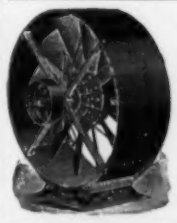

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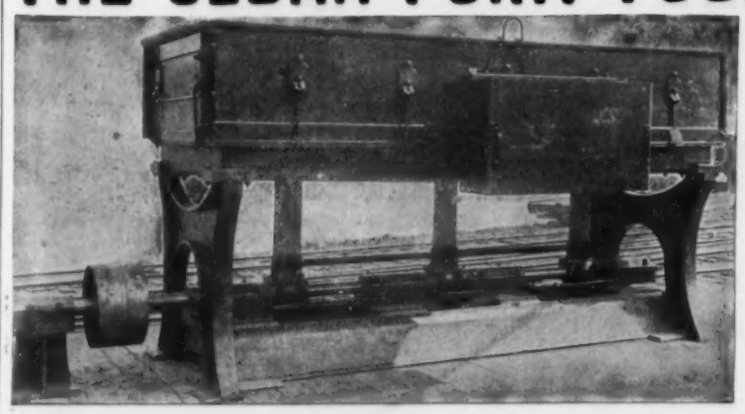

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ner as can the assets of an individual. It is only when, in a proper proceeding, instituted by a member of the insolvent copartnership, or by a creditor, a court of equity interferes, and applies the copartnership assets first to the payment of the copartnership debts. And such application is not thus made because the copartnership assets are trust funds for the payment of copartnership creditors, nor because creditors of an insolvent copartnership are by law given a lien thereon to secure the payment of their debts; but such application is based upon the equitable doctrine that that fund, on the faith of the existence of which a credit was given, should be applied in equity to the liquidation of such credit.—*Richards v. Le Veille (Supreme Court of Nebraska), 62 N. W. Rep. 304 (468).*

Paper Pulp for Leaks.

Paper pulp is one of the most useful articles within the reach of mankind.

Mixed with glue and plaster of paris or Portland cement, it is the best thing to stop cracks and breaks in wood.

Pulp paper and plaster alone should be kept within the reach of every housekeeper.

The pulp must be kept in a close stoppered bottle, in order that the moisture may not evaporate.

When required for use, making it of the consistency of thin gruel with hot water, add plaster of paris to make it slightly pasty, and use it at once.

For leakage around pipes, to stop the overflow of water in stationary washstands, where the bowl and the upper slab join, it is invaluable.

Used with care it will stop leaks in iron pipes, provided the water can be shut off long enough to allow it to set. Around the empty pipe wrap a single thickness or two of cheese cloth just wide enough to cover the break, then apply the compound, pressing it in place and making an oval of it somewhat after the fashion of lead pipe joining, only larger.

The strength of this paste when once it is thoroughly hardened is almost beyond belief. The bit of cheese cloth prevents any clogging of the pipe by the paste working through the cracks.

An iron pipe that supplies the household with water had a piece broken out by freezing. The piece was put in place, bound by a strap of muslin, then thoroughly packed with paper pulp and Portland cement, and was to all appearances as good as new.

Paper pulp and fine sawdust boiled together for hours, and mixed with glue dissolved in linseed oil, make a perfect filling for cracks in floors. It may be put on and left until partly dry, then covered with paraffine and smoothed with a hot iron.—*Rural Mechanic.*

Waterproof Building Brick.

At a recent meeting of the Australian Association for the Advancement of Science Professor Liverside read a paper on the waterproofing of brick and sandstone with oils. These experiments were made with the view of ascertaining the length of time brick or sandstone are rendered waterproof or protected by oiling. The oils used were the three commonest and most readily obtainable for such purposes, namely, linseed oil, boiled linseed and the crude mineral oil known as "blue oil," used for preserving timber. The weatherings were made upon a flat portion of the laboratory roof fairly exposed to the sun and weather. Good, sound, machine made bricks were experimented on.

The amount of oil and water taken up by the sandstone was very much less than that absorbed by the brick, although the area of the sandstone cubes was much greater than that exposed by the bricks. Equal amounts of the raw and boiled oils were absorbed; the blue oil, however, was taken up in much greater quantity by both brick and sandstone, but by the end of twelve months the whole of the 13½ ounces of blue oil had apparently evaporated away, and the brick had returned to its original weight, but those treated with raw and boiled oils remained unchanged.

After the second oiling in November, 1880, and exposure for nearly four years and two months, the brick had practically retained all of their oil, inasmuch as they had not lost weight, and were also practically impervious to water. It was noticed that the sandstone cubes treated with raw and boiled oils returned to their original weights, but do not appear to have lost the beneficial effects of the oils, being practically impervious to water.

Blondel, of France, has devised a successful method of welding lead. The surfaces to be welded are carefully cleaned, and then a layer of lead amalgam, composed of lead and quicksilver, is placed between. An ordinary soldering iron is then passed over the edges, the mercury is vaporized, and the finely divided lead fuses and unites the surfaces in a perfect weld.

Cost of Steam Power.

So many other questions connected with manufacturing seem to be more important than the actual cost of the power consumed in running lathes, looms, elevators and such machinery that this phase of the industry and the possible economies resulting from a substitution of electricity for steam are apt to be ignored. There are curious differences of opinion on this subject by persons not well informed; hence a recent contribution to the discussion made by Horatio A. Foster in the pages of the *Electrical Engineer* possesses much interest.

Before presenting definite figures to illustrate facts this gentleman refers to two or three factors in the cost of steam power which are generally overlooked. In the great majority of cases, he says, a power plant is run at about three-fourths its rated capacity. Hence the fixed charge and the coal consumption for each horse power actually applied to work exceed the estimate. Again, it is customary to consider the price of fuel mainly in computing the cost of steam power, whereas the labor item is often the larger of the two. Third, there are great wastes in fuel from poor boiler construction, poor setting, poor coal and poor firemen. The last point is emphasized by an allusion to two firemen employed in the same establishment, one at night and the other by day. One man consumed about twice the amount of coal that the other did.

Mr. Foster has been making investigations in a number of typical establishments, all in Buffalo, of late. These include newspaper offices, bakeries, flour mills, a department store, an electric light plant and three waterworks plants. Most of them were in operation twenty-four hours daily, but some of them only nine, eleven or fifteen hours. The average power used varied from 10 to 4,000 horse power. Mr. Foster thus secured a great variety of conditions. The resulting figures show that each shop and factory differs so much from every other that no general law can be laid down beyond the well established rule that plants consuming large quantities are more economical than those using much less. In one establishment, using from 1,300 to 1,400 horse power, but running only eleven hours a day, the annual cost per horse power was $32.70; two others, whose consumption was from 200 to 300, but which were in operation twenty-four hours daily, expended $48.19 and and $53.37; while still another, having the same hours, but using from 3,000 to 4,000 horse power, could not produce it for less than $62.01. Seven other plants, averaging from 10 to 60 horse power, showed an outlay ranging between $76.45 and $233.95 annually for horse power.

In a complete discussion of the cost of steam power and economy in its production there are many factors to be considered. The approximate cost, however, can be gained from a consideraton of the type and the first cost of the apparatus and the price of coal in the locality in which the power is to be generated.

It is an old adage that "the best is always the cheapest," but this is not always true in regard to a steam plant. If coal be cheap, or the amount of power to be developed be small, it would be folly to install high priced apparatus that would secure the maximum economy in the use of fuel. This high-class machinery, however, is much cheaper than formerly, and this fact changes the conditions somewhat from those existing but a few years ago.

Another fact which tends greatly to economy, and which is generally overlooked, is that with the more economical engines smaller boilers are sufficient, and thus the saving on the boilers will partially compensate for the increased cost of the engine.

Strictly speaking, there is no such thing as the horse power of a steam boiler. However, as engines are universally rated in that unit boilers have been rated in the same. The amount of steam required per horse power hour differs with different types of engine, and with the conditions under which they operate. Hence the usual method of rating boilers is to a certain extend misleading. The American Society of Mechanical Engineers favors the standard adopted by the judges of the Centennial Exhibition of 30 pounds of water per hour, evaporated at 70 pounds pressure, from a temperature of 100° Fahr. for each horse power. This is what is generally understood in the rating of steam boilers, unless some other unit is specified.

The number of hours per year that the engine is in operation also has a great influence on the question of the original cost of the plant. It is evident that the charges to be made for interest on the first cost of the plant will be the same whether the plant is in operation one hour per day, or the entire twenty-four. If the plant is in use only a small fraction of the time, or if fuel is cheap, the interest on the additional cost of the high grade apparatus will more than balance the saving in fuel.

The running expenses, other than the cost of coal, have an important bearing on the selection of an engine for economy. Dr. Emery, in his paper on the subject before the American Institute of Electrical Engineers, said: "Such expenses have frequently been neglected or inadequately discussed, so that their very important bearing on the results is not generally understood. It will be shown that such additional expenses are fairly constant, independent of the type of engine, and that without considering interest or dividends they will in some cases equal the cost of coal. It will be seen therefore in comparing two engines, both of which are good, so that one, for instance, will only effect a saving of coal compared to the other of, say, 12½ per cent., making the relative costs of fuel as 8 to 7, that, if additional costs equal to the former be added to both, the relative economies will be as 16 to 15, and the saving reduced to 6¼ per cent. simply by the summation of costs. If then we assume that all expenditures should pay 10 per cent. interest or dividends on capital invested, and 10 per cent. of the difference in the first cost of the engines equals an amount which represents a saving of 6¼ per cent. of fuel, then the cost to the owner of the steam plant will be exactly the same in the two cases, since in one case he will pay in additional interest or dividends on the capital invested the same sum as he will pay for additional fuel if he uses the cheaper engine."

From this it will be clearly seen that all expenses, other than of fuel, tend to neutralize the advantages to be gained by the use of high grade apparatus even when these expenses are equal for the two types.—*Industrial Record.*

(To be continued.)

Pounding Engines.

If there is any one thing a new engineer prides himself upon more than another it is in his ability to locate a pound in his engine, and as a general thing it is the very thing which sets him to looking just where it isn't for it.

An amusing instance of this happened in my own experience several years ago, when an engineer in charge of a little 15 horse power engine. I was exceedingly troubled over a stubborn pound and started in to locate it. At first I was sure it was in the connecting rod, then it changed into the wrist pin; driven from there it located in the main journal, then in the outboard bearing, and finally we came to the conclusion it must be in the piston.

All this time I was very sure I knew where it was, and often said to the engineers that I would stop it when I got ready, at the same time making a note of all suggestions offered by those who had happened to hear it; but still the pound seemed to increase rather than diminish, until I was inclined to think my knowledge might possibly be unable to cope with the case. One day a very quiet, unobtrusive individual came into the engine room from another department, and knowing him never to intrude his ideas upon any subject unsolicited, I asked him where he thought the pound was putting in its work just at that particular time. He very quietly moved about the machine, feeling his way along from the cylinder outward until he had crossed to the shaft, when with the utmost deliberation he pointed to the drive wheel. In order to convince him that he must be wrong I shut the engine down, struck the wheel key once or twice, and turned up the set screws. Then starting up, I watched his face to see the look of chagrin at being so far from correct, when, much to my surprise, I found the machine running more quietly than it had for several days.

How did it happen? Why, he knew just what he was about and I didn't, that was all; and being placed in his position a few days ago, I think a few words on the subject will not come amiss. There are few things which will cause an engine to pound heavily, and with a knowledge of these and careful investigation, the cause of the trouble may be located and removed. If the connecting rod connections are quite loose, the engine will probably pound whether there is much or little compression, and one of the first things that should be tried is to locate the source of the sound. If this cannot be done, then a few tests can be made which will in all probability discover the cause. With the cause known, the remedy is obvious.

When looseness at either end of the connecting rod is suspected, but is not plainly evident, the engineer should go carefully at work to ascertain whether there is any lost motion at the suspected part before keying up any. In the case of a connecting rod it is well to put the engine on the centre when keying up, as the tendency is for the crank pin to wear flat on one side, and if keying is done at any other point of the crank travel the boxes may be brought too tight, which would cause heating.

The crosshead pin always wears more on the sides than on the top, leaving the pin somewhat elliptic in section, and that is why a portion of the brasses are cut away along the sides where they would come together when encircling the pin.

Before keying up, it is a good plan to arrange a short lever on some convenient fulcrum, so that pressure can be brought to bear to shake the rod up and down on the pin, or on the collar on the end of the pin, as when this is done the extent of the lost motion can easily be detected by placing a finger so it will press on the pin or the collar at the end of the pin. It is rather uncertain for one person to manage the lever and feel for the looseness also, as the motion given the body in working the lever will detract from the sensitiveness of observation regarding the amount of play at the connecting rod.

The use of a lever in this way will detect any looseness that may exist at any joint so tried, especially on the connecting rod at crank or crosshead end, the play of crosshead between the guides, the looseness of piston rod in the crosshead or of piston head on the rod; a little ingenuity is often required in rigging this device so as to bring force into play to give the shaking motion required, but if the lever is properly worked the slightest play can be detected.

Another way which is much used by engineers on four valve engines is to throw the crank on the centre, block the steam valves, so as to fill both ends of the cylinder with steam, and then by opening the exhaust valves, first at one end and then at the other, the shaking of the rod may be done without the trouble of a lever.

Many times a looseness will cause a heavy pound in the engine that, because it cannot be detected in the connecting rod, will be supposed to exist in the cylinder, when as a matter of fact it is the main journal that causes the trouble. A looseness at this point is more difficult to locate than at any other, especially when the box is separated at an angle, as any tightening on the cap will cause the bearing to heat without removing the cause of the pound. Bearings set in this position carry a portion of the weight of the shaft at the point where it is separated, which permits greater wear in this direction than would be the case where the separations were horizontal; any attempt to tighten a cap of this kind will bring the corner of the box lining more forcibly against the shaft, causing it to heat so that tightening the journal cap would be no indication that the box was in proper condition, and the journal might heat while still pounding.

A 150 horse power slide valve engine had caused considerable annoyance for some time by a dull, heavy thump at each revolution, just about the time the crank had passed the centre. The engine was running 150 revolutions per minute, and the thump was sufficient to jar the building. The engineer in charge had made several attempts to locate the sound, but without success. A new man taking hold of the engine studied it for some time, trying to ascertain the location of the noise, but could not do so by ordinary means. All but the joints, it was thought, had been adjusted, without any better results. A lever was then brought into play to lift each end of the connecting rod so as to show any lost motion that might exist there, for when the rod is shaking up and down, and the finger is held so that it is pressed on the brasses and pin at the same time, any looseness can be readily detected.

This methods was applied to crossheads, eccentric and other parts without discovering any looseness. Outside the cylinder and valves the only part left to be investigated was the shaft bearing and fly wheel. When a long lever, consisting of a 2½ inch pipe, was brought to bear on the crank end of the shaft a looseness that had not been discovered was found to exist at that point. The journal cap was taken off and it was found that it had never been correctly adjusted, as it had worn oblong; and during every revolution the shaft would jump first in one direction and then in the other, on a line with the push and pull of the connecting rod.

A good time to test this shaft is when the engine is running, as then the end of the finger can be held so it will press on shaft and boxing, and any jumping of the shaft can easily be detected, although this is not practicable on some engines where the eccentric comes close to pillow block. When the latter is the case a lever of sufficient strength can be rigged to shake the shaft, if any necessity exists for such an arrangement.

Sounds that appear to proceed from first one place and then another about the engine can generally be located by the use of a piece of rubber tubing, one end of which is held to the ear while the other end is brought close to the suspected place. The opposite ear should be closed to shut out the sound. Ingenuity and facility for research are necessary in an engineer, if he expects to wrestle alone with all the difficulties which come up in his engine room experience, and the one who tries to run his engine by some one's else is quite sure to find his employer calling for that some one else to adapt those rules to this particular place.

An old yet very effective way to locate any noise inside of an engine cylinder is to place one end of a wrench or other piece of metal between the teeth, and, resting the other end on the cylinder head, close both ears. Every sound within the cylinder can thus be readily heard.—"*Rex*," *in Lord's Magazine.*

Electric Items Worth Remembering.

An accumulator should never be short circuited.

The loss in a converter does not exceed 5 per cent.

To maintain an electric arc 1 inch long requires about 118 volts.

A well charged cell of a storage battery has about one-half the resistance of a discharged one.

A secondary battery of 800 elements will illuminate a vacuum tube of high resistance for three and a half hours without recharging.

The electrical resistance of German silver is, in round numbers, thirteen times that of copper, and the resistance of iron is six times that of copper.

The discharge of small storage cells should be limited to 1¼ amperes per plate; of large cells, 2½ amperes per plate. A battery should not be allowed to remain discharged longer than two days.

In an arc light produced by alternating currents both carbons are consumed at the same rate and both remain pointed. Carbons burn faster with the alternating currents than with the direct.

The electrolytic fluid used in different storage batteries varies. In some it is a 20 per cent. solution of sulphuric acid in water; in others it is much stronger, the proportion of acid being as high as 36 per cent.

For a pole finder take two clean lead electrodes and dip them in dilute sulphuric acid; connect them with the circuit to be tested. One electrode soon becomes brown and the other gray. The brown electrode indicates the positive pole.

In mixing the acid solution for a storage cell care is required to avoid accident. The acid must be very slowly added to the water, to avoid splashes and the too sudden rise of temperature. The water must never be poured into the acid.

The internal resistance of a cell of storage battery is from 0.001 to 0.005 of an ohm. The average electro-motive force is 2 volts, and the working capacity of a good sized cell is 350 ampere hours, that is, it will economically deliver a 35 ampere current for ten hours.

Where no coil is used it requires a battery having an electro-motive force of 1,080 volts to produce a spark 0.005 inch long in air. Sir William Thomson said "greater electro-motive force per unit length of air is required to produce a spark at short distances than at long."

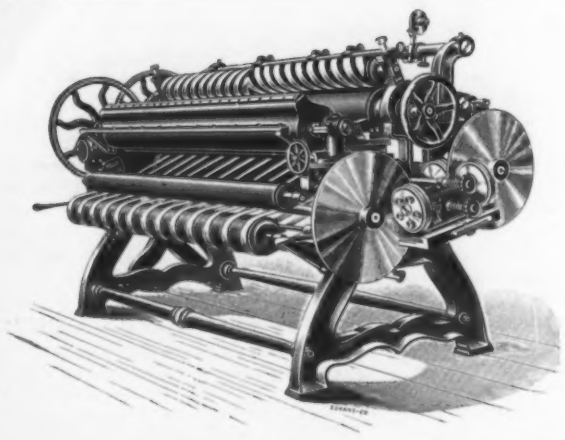
To find the direction of a current, arrange the wire conveying the current in the same meridian so that it will be north and south. Place a common compass under the wire. If the N. pole of the needle turns west, the current is flowing from south to north.

In charging storage batteries, the electromotive force of the charging current should be 2.3 volts for each accumulator in series, and the charging current should not exceed 1 ampere per plate for small cells, composed of, say, 6x8 inch plates, or two amperes per plate for large cells, composed of, say, 10x12 inch plates.

It requires a potential difference of 10,000 volts to produce a spark 1-10 inch long between two metal balls. As this proportion practically holds good for longer distances, it would of course require 100,000 volts to produce a spark 1 inch long, the striking distance between a point and a plate being at the rate of 1 inch for 23,400 volts.

Trouvé's bichromate of potash battery solution is as follows: Water, 9 quarts; pulverized bichromate of potash, 2.6 pounds; sulphuric acid, 7½ pounds. It is prepared as follows: The powdered bichromate of potash is dissolved as far as possible in the water, and the sulphuric acid is added very slowly, stirring continually with a glass rod. The mixture heats by degrees, and the bichromate becomes completely dissolved, and when once dissolved the solution remains clear, and crystallization does not take place on cooling.—*Scientific American.*

It is a false system of economy which attempts to save money by the use of cheap oil. In all cases you should get the best oil procurable for the purpose for which it is to be used. It is folly to use the same quality of oil for light and heavy machines, for high and for low temperatures, many times as much as 25 or 30 per cent. of the available power being wasted through the use of an improper grade of oil.



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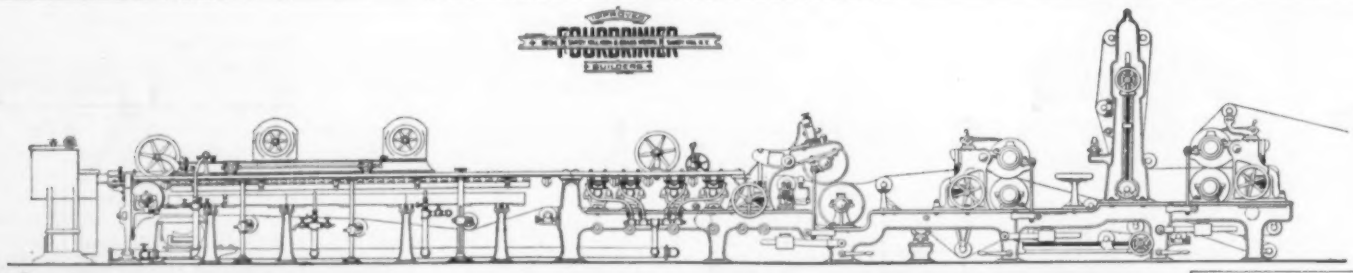

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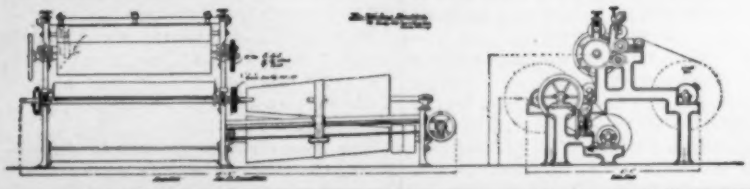

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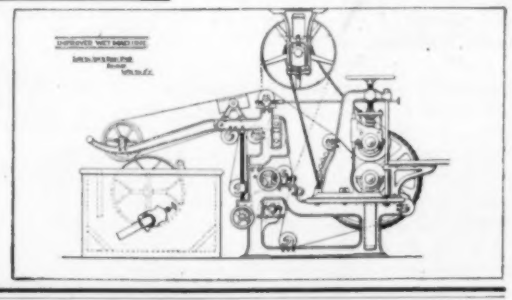

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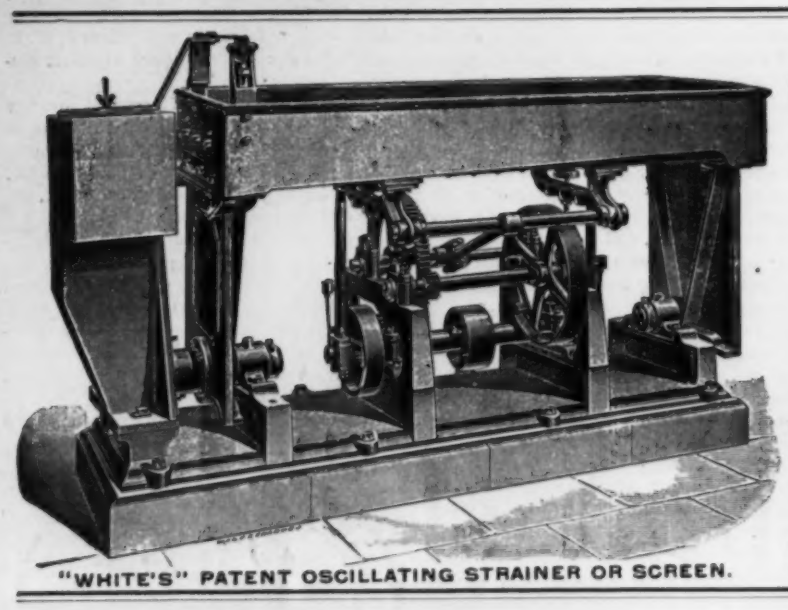

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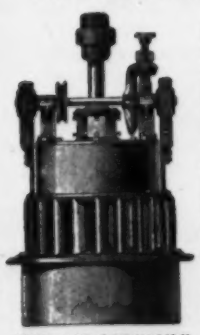

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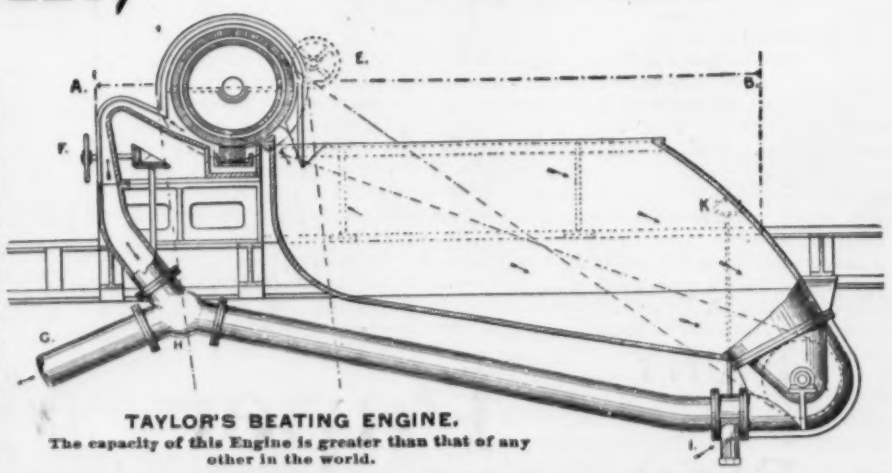

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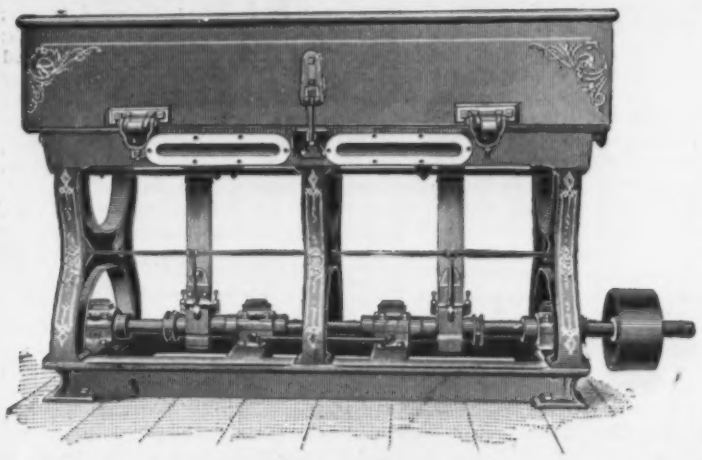

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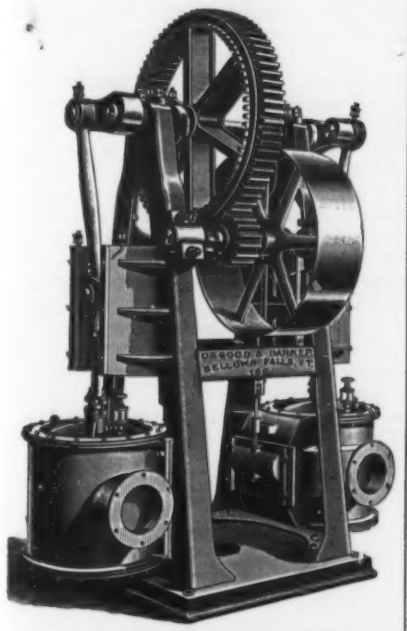

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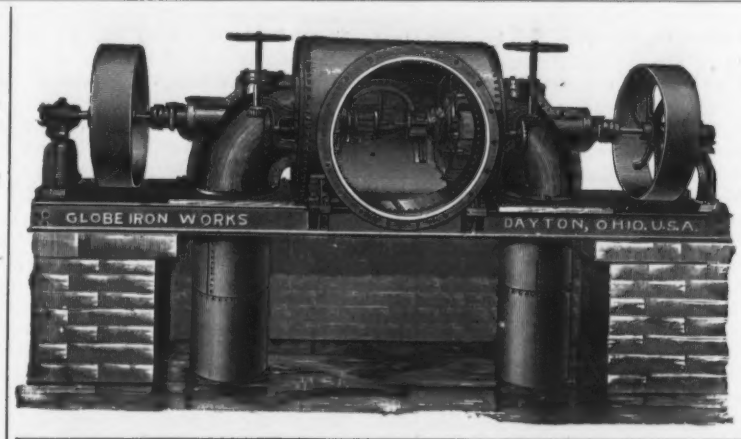

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The originals of these certificates and tests of other sized wheels can be seen at our office.

TEST OF A 45 INCH WHEEL—JULY 9, 1894.						TEST OF A 42 INCH WHEEL—JULY 14, 1894.					
	Head.	Rev. per Min.	Cu. Ft. per Sec.	Horse Power.	Per Cent.		Head.	Rev. per Min.	Cu. Ft. per Sec.	Horse Power.	Per Cent.
Whole Gate,	16.06	119.17	141.58	205.27	79.76	Whole Gate,	16.33	128.00	134.18	199.56	80.50
⅞ "	16.42	122.00	127.18	195.19	82.58	⅞ "	16.56	134.80	120.85	188.14	83.09
¾ "	16.78	117.33	112.60	175.74	82.18	¾ "	16.59	129.33	104.85	162.89	82.77
⅝ "	17.03	111.33	98.12	149.99	79.31	⅝ "	17.13	125.25	92.76	142.40	79.21
½ "	16.88	118.67	82.07	118.40	75.53	½ "	17.48	121.00	70.80	98.85	70.60

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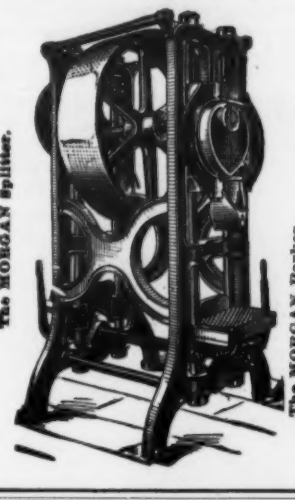
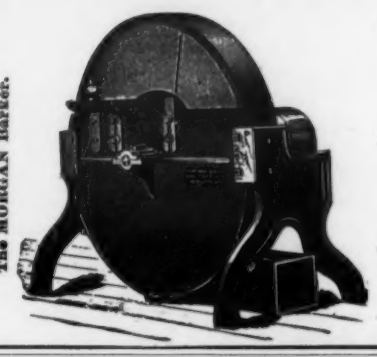


The MORGAN Splitter.



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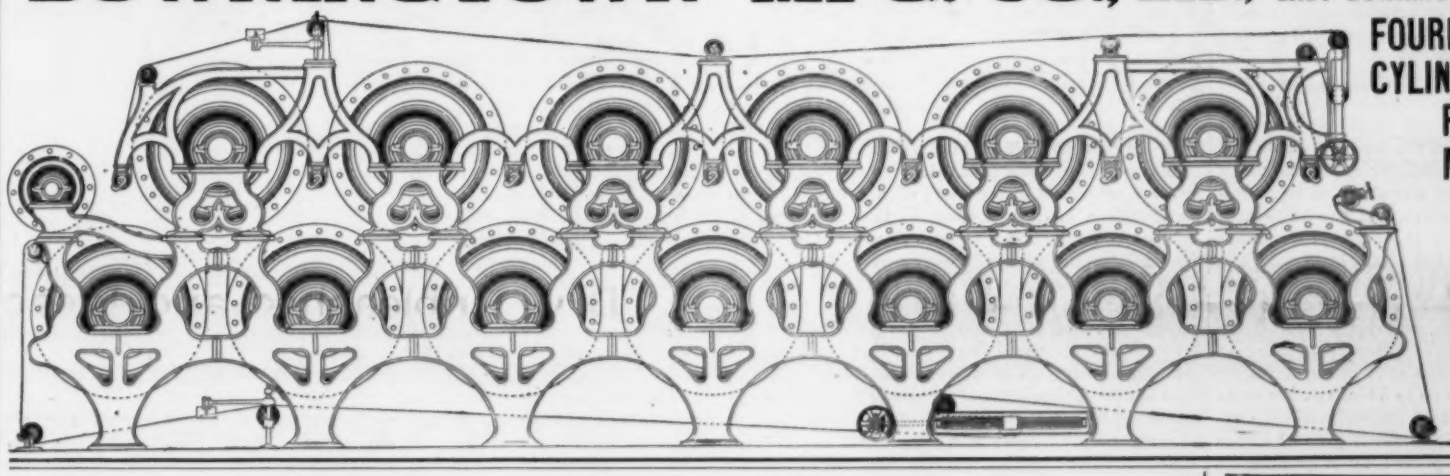

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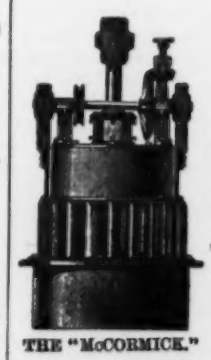

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The SUCCESS Turbine, long and favorably known in the paper trade as a first-class water wheel, possesses valuable features found in no other turbine, and gives a high percentage of useful effect from the water used.

THE McCORMICK and SUCCESS TURBINES are especially adapted for driving Paper and Pulp Mills and are extensively used by the largest manufacturers in the United States and Canada. Parties using wheels which are unsatisfactory and those contemplating the improvement of powers will find it to their interest to confer with me, as I am willing to guarantee results where others have failed, no matter what make of turbines has been tried.

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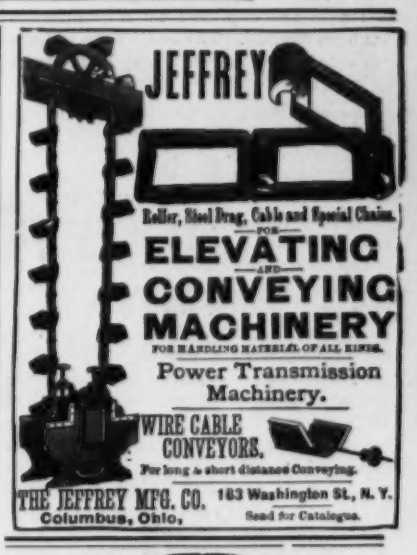

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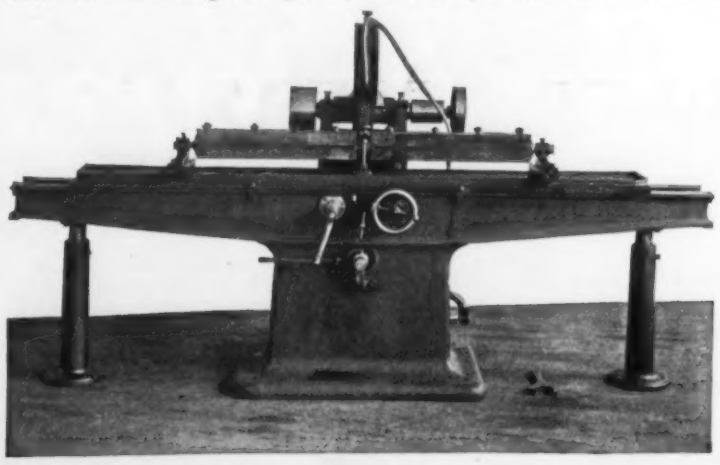
The Diamond Automatic Knife Grinder for Long Knives.

This machine, which is familiar to the readers of THE PAPER TRADE JOURNAL, will grind a large variety of knives, such as planer knives, paper knives, knives for tobacco cutters, rag knives, iron shear knives, tin plate knives, &c. Its construction and design are such that it will admit of grinding knives of every description, it being heavy enough for the largest and thickest knives. The wheel shown on the machine in the illustration is a disk wheel, but the head which carries it may be removed and a cup wheel substituted therefor, and many users of machines of this kind are now purchasing them fitted by the manufacturers with a cup wheel, which leaves the bevel of the knife perfectly flat, without any concave. The spindle carrying the wheel runs in extra long bearings, fully



DIAMOND AUTOMATIC KNIFE GRINDER FOR LONG KNIVES.

protected from dust. The wheel is fed to the work by hand or automatically, the feed being adjusted to any ordinary degree of fineness of cut.

As shown in the illustration, the water hood and pump are provided with necessary arrangements so that no water or spray will be thrown on the machine or on the operator. By a special device the knife may be turned so that any angle of bevel desired may be obtained, and the knife may be ground toward the edge or from the edge. The small hand wheels on each end of the knife bar are for the purpose of placing the knife in a position parallel to the travel of the table, a device which is very important where the knives are wider at one end than at the other. For grinding knives of a length up to 50 inches, the short table is used without the adjustable posts in the ends, but for knives above 50 inches in length the improved table here shown has been devised. The ends of the bed are supported by posts, which may be adjusted to suit any degree or inequality in the floor; by means of this the table may be level and kept so without resorting to blocking under the legs. As the weight is borne principally by the centre column, there is no tendency to warping or bending of the table, as in machines supported by legs at each end of the bed.

The same mechanism is employed to move the knife and the wheel, but the running gears, spindle, and bearings are all larger in diameter. The bearings are longer and have bronze bushings, which when worn can be replaced at a slight expense. The bed is heavier and wider than in the short pattern, and the whole machine is made from a new pattern which gives increased weight so distributed as to make the machine very stiff. This machine is made in all sizes up to 120 inches in length, the longest size weighing about 5,000 pounds. It is made by the Diamond Machine Company, Providence, R. I.

The Round Belt.

The round belt is frequently discussed, and against it some have "lodged a complaint," but enough is left to say a word in its favor, especially when the sphere of its action is confined within certain limits, which is a phrase which fits with equal force to everything else. That domain of best service, over the bounds of which it is not profitable to go—that is, the "limit of elasticity," which, if passed, a penalty is to be paid—applies to this organ of power transmission as to any other.

Now, while it is true that a belt for service must have freedom of bending without loss of strength, and it must have certainty of adhesion without sticking or slipping, it is equally true that the first of these propositions means thinness of substance for best effect, which the round belt does not possess; but the second proposition is most admirably secured by the wedging action of the round belt in the angular groove of the pulley.

In a general way, however, we are safe in saying, the round belt occupies less room for its installation and running and requires lighter pulleys than do flat belts; it will work with little or no loss of efficiency when the connected shafts are slightly out of line with each other, where a flat belt would not stay on its pulleys, and indeed it may be led to and from pulleys at considerable angles without the use of guiding pulleys, thus favoring certain special devices for which a flat belt cannot be made to answer.

Round belts for best driving must necessarily be limited to the transmission of small powers; their durability will depend upon the quality of the material of which they are made, a statement of general application, but particularly applicable to this form of belt because it is more severely punished by bending than flat belts.

Authorities of note have had their say about round belts and the manner of using them, of which notice is here taken.

Referring to the grooves in which round cords of any material are to run, translating Armengaud, we have: "The angular shape of groove is preferred in order to increase the adhesion of the cord, which is thus pinched between the inner surfaces of the groove by the primitive tension it receives, similar to ordinary belts. The angle of the groove is made ordinarily at 60°."

Fairbairn says: "Round belts of cat-gut or hemp are sometimes used, running in grooves, which are better made of a triangular than a circular section, so that the belt touches the pulley in two lines only, tangential to the sides of the groove. In this case the friction of the belt is increased in proportion to the decrease of the angle of the groove."

In all these references to grooves of the pulleys, no mention is made of the better plan of making the sides of the groove concave instead of flat, by which increased area of contact is obtained; by this suggestion a semicircular bottom, which the belt touches, is not meant. The contact and driving area of the belt must always be at the sides, never on the bottom of the groove, except in the case of pulleys for merely carrying the belt. The shape of the groove may be that of a Gothic arch, or made by two circular arcs or arcs of other curvatures, meeting in a point or fillet below the belt. More contact is certainly obtained when a flexible circle rests in a concave than on a flat surface.

There is a difference of opinion as to the proper angle of the V grooves; 40°, 45° and 45° and even 60° have been named for the inclination of the sides. With the angle of 40° the friction of the rope upon the sides of the groove amounted to nearly three times as much as if the rope were working on the surface of a plain drum without grooves.

Some of these experiments were made for ropes, but I conceive that the same forms would give like results for round belts of leather, since the chief object is to produce the greatest amount of adhesion with least sticking upon a yielding cylindrical body of a given diameter.

Wedding, a machine manufacturer in Berlin, found by experiment that the resistance of a rope to sliding in a V grooved wheel of 60° angle is double the resistance that the same rope meets when in a semicircular groove which it just freely fits.

A correspondent says, as regards the driving power of round belts: "We have seen one of 1 inch diameter doing for years a work which proved too much for a 7 inch flat belt." Other experiments show that a quarter inch round belt is more than equal to a 1 inch flat and a half inch round more than a 3 inch flat. In accepting these results, while the possibilities of adhesion are clearly demonstrated, nevertheless, to what extent of time durability survives this ordeal we do not know; a desirable limit may be met, perhaps, if the material be good, since there is "nothing like leather;" we must be sure that our ronnd belts are made of the stuff that proves its worthiness of such a superlative.

The driving of the one-quarter inch and one-half inch round belts noted above is out of all proportion when the sectional areas and the pulley contacts are compared. The areas are about 3 to 1 and the contacts 4 to 1 for the one-quarter inch and 6 to 1 for the one-half inch belts; all in favor of the flat belts. Truly there 's nothing like leather for defeating calculations and demolishing proportions.

The principle of increased diameter of pulley and consequent greater velocity of belt holds equally good for the round as for the flat belt. The round belt is at a greater disadvantage from thickness than the flat belt, and for this the increased diameter and speed brings to it the double advantage of less bending and less work. There is also less space occupied and less weight in motion.

It is needless to say that the joining of the ends of round belts is difficult, for the joining device should not only pass the groove without jamming or noise, but be equally strong with the belt itself and susceptible of ready adjustment.

Finally, the plain advice may be here given, that for all power belts use good material and a fair proportion of it for every power transmission, and never use less than will overcome starting frictions, so as to avoid destructive abrasion of the driving surfaces, since round belts are more severely taxed in this particular than flat ones; remembering also that more allowance of belt than is necessary will burden the machine with a useless load and not contribute to its better driving.—*J. H. Cooper in Machinery.*

Firing Boilers with Mixed Coal.

A very interesting experiment, and one which ought to revolutionize the firing of steam boilers, has been in progress at the flour mill of Urban & Co. in New York for several months, and has now proceeded so far that positive advantages can be claimed with confidence.

The mill has made 1,200 barrels of flour in twenty-four hours, though the ordinary output is much less. The engine is a Corliss pattern of about 400 horse power, driven by steam generated in two upright tubular boilers with twin furnaces and covered with a composition to retain the heat.

The fuel formerly used was run-of-mine soft coal, but last March Mr. Urban, having long been dissatisfied with the fuel, began to use in connection with it various proportions of screenings of hard coal. The improvement was marked from the first. The amount used was much less, the cost was reduced, and the smoke and soot practically disappeared.

When the experiment began, the furnaces required fully 1,200 pounds of soft coal per hour to develop on the average 380 horse power. The amount now required for the same service is 890 pounds on the average. The coal used is one part soft coal culm, or any of the cheapest product of the mines, and four parts hard coal screenings, such as is not considered valuable in the general trade and is sold to whoever will buy it at a mere nominal price.

All possible proportions were tried, and hard coal was used entire, but the present proportion of four to one is found to be the best. This affords soft coal enough to cement the fuel into small masses, but is not enough to harden it into large masses, as was the case if a greater proportion of soft coal was used. As the soft coal ignites first it in a measure cokes the whole, and the slow burning anthracite assists in producing a very lasting fire, not needing replenishing for a much longer time than is the case with clear soft coal. Anthracite used alone fills the grates with ashes, but the accepted mixture burns very free.

The cost of hard coal screenings is $1.45 per ton and of soft coal slack $1.50. The difference is so small that either price may be taken, and reckoning the consumption of 900 pounds an hour, which is slightly more than the reported amount, a twenty-four hour run would consume 21,360 pounds at a cost of $16.02, reckoning $1.50 to the ton. The cost of run-of-mine soft coal is $2.20 per ton. At an expenditure of 1,200 pounds an hour, which is considered below the average requirement, a twenty-four hour run on soft coal would cost $31.68.

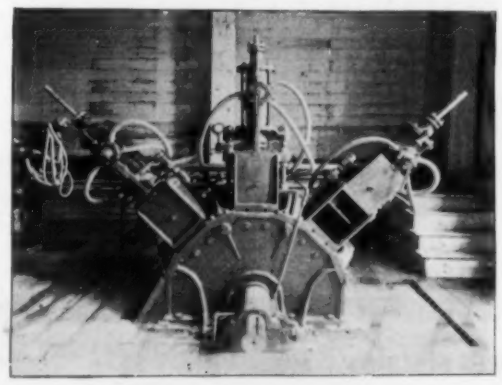
The saving appears to be largely in the entire combustion of the coal. If the test has proved anything it is that a much greater amount of carbon is blown out of the chimney than anyone has supposed. With soft coal there was not only a constant waste in the dense smoke that ruined so many things about the city, but a blower was needed to keep up the draught, and that carried the particles of carbon up the flue in a constant stream.

With soft coal the chimney had to be blown out every twelve hours, but with the present mixture no blower is used. The flue is scraped once a week, just as it was with soft coal. It is not difficult to see by this that the forcing of draughts costs money.

The mixed coal is kept very wet; in fact fairly saturated. In this condition it does not escape from the chimney at all, either in smoke or in fine particles independent of the smoke. For the most part there is no perceptible smoke, and it is never more than a thin jet that does not become darker than a light gray. One requirement is that the boiler capacity shall be ample. It is from having to crowd the boilers quite as much as anything else that so much coal is thrown out of the tops of chimneys unburned. The above results cannot be obtained if the steam generating apparatus is scant.—*Scientific American.*

Wood Pulp Grinder.

The photograph from which the accompanying cut is made was taken in a wood pulp mill, and illustrates the three pocket wood pulp grinder built by the Cedar Point Foundry Company, Port Henry, N. Y. The stone used is 50 or 52 inches in diameter, with a 20 inch face; the pocket taking the wood is 18 inches long.



THREE POCKET WOOD PULP GRINDER.

The cylinders are of solid brass, bored, of 10 inch diameter, having cast iron heads nicely fitted to them. The piston heads are made to take four Garlock packing rings, five-eighths of an inch wide, making the face of the packing 2½ inches. This makes a very durable packing, and can be easily replaced by taking off the top cylinder head and raising the piston head follower, which is held in place by a brass nut. The piston rods are of soft steel. All of the packing glands are of brass, having three stud bolts to keep them in position. The cylinders are furnished with a five-way or double pressure valve, which is used where a second pump is employed to furnish a light water pressure for returning the pistons. By this plan the working water pressure is not reduced, and the quality of the pulp is uniform. If one water pressure only is used a four-way valve is furnished.

The pockets are cast in one piece and are strong and durable. Provision is made to prevent slivers from accumulating between the pockets. The pocket doors are of wrought iron, one-eighth inch thick, made to slide in a groove cast in the pocket. The alignment of the piston rod is preserved by guides on the inside of the pocket, against which the pocket follower slides.

The main boxes are 18 inches long, having a wood lining. The cap is tapped for a half inch pipe for running water. A babbitted box with water cooling chamber is furnished if preferred.

The shaft is of soft steel, with bearings 6½

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FULL SIZE.

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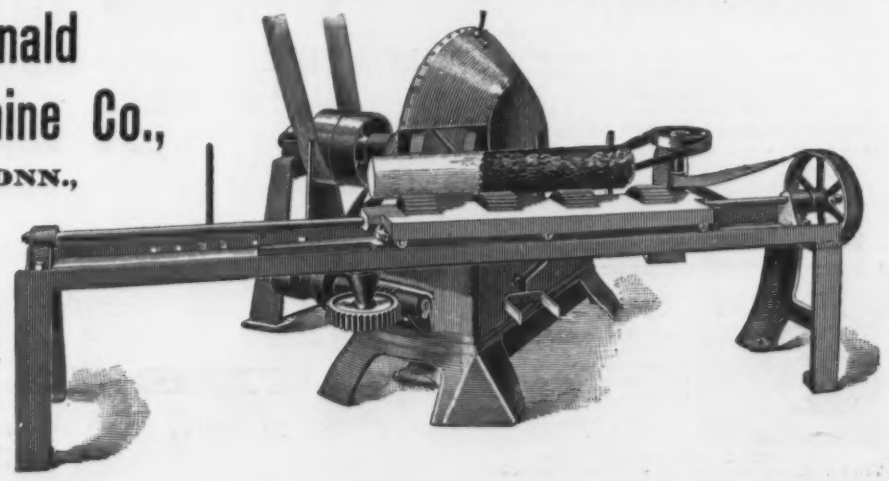


inches in diameter. The coupling connecting with the water wheel shaft is shrunk on to the grinder shaft and keyed. Both flanges, however, can be removed from the shaft without disturbing the coupling, as the thread in the flange on the coupling end is made large enough to slip over the flange thread on the opposite end of the shaft, thus allowing both flanges to be removed from the same end of the grinding shaft.

The flanges are 36 or 40 inches in diameter, weighing about 750 pounds each, with the side faced to fit the stone. The flanges screw on to the shaft right and left hand. Three hundred horse power on each grinder, giving from 225 to 250 revolutions per minute, seems to give the best results.

The extent to which a chimney can poison the atmosphere has been scientifically determined by a test made in Berlin. The soot which comes out of the chimney of a single sugar refinery was gathered for six days, and found to weigh 6,800 pounds.

The Perfect Steam Boiler.

All users of steam boilers have in their mind certain requirements that seem to them to be those necessary for the production of the present boiler. These opinions naturally differ widely, according as we favor one particular style of boiler or another. There are, however, certain requirements which all agree should be fulfilled in order to produce a first-class boiler.

The late George H. Babcock, whose name is familiar to all steam engineers, and who was for so many years engaged in the improvement of this class of apparatus, shortly before his death wrote, as the result of his experience and study, the following requirements, which he considered to be absolutely essential to the production of a good steam boiler :

1. The best materials sanctioned by use, simple in construction, perfect in workmanship, durable in use and not liable to require early repairs.

2. A mud drum to receive all impurities deposited from the water in a place removed from the action of the fire.

3. A steam and water capacity sufficient to prevent any fluctuation in pressure or water level.

4. A large water surface for the disengagement of steam from the water, in order to prevent foaming.

5. A constant and thorough circulation of water throughout the boiler, so as to maintain all parts at one temperature.

6. The water space divided into sections, so arranged that should any section give out no general explosion can occur, and the destructive effects will be confined to the simple escape of the contents, with large and free passages between the different sections to equalize the water line and pressure in all.

7. A great excess of strength over any legitimate strain, so constructed as not liable to be strained by unequal expansion, and if possible no joints exposed to the direct action of the fire.

8. A combustion chamber so arranged that the combustion of the gases commenced in the furnace may be completed before their escape to the chimney.

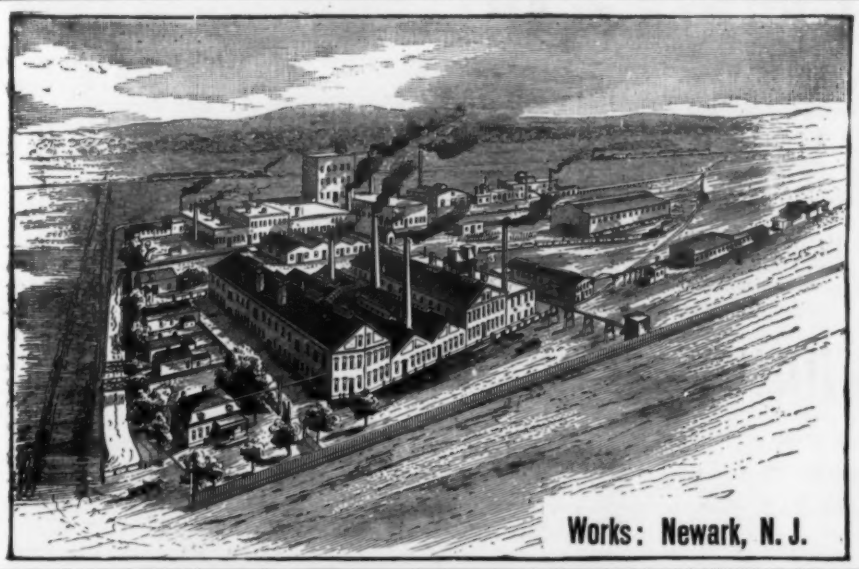
9. The heating surface as nearly as possible at right angles to the currents of heated gases, and so as to break up the currents and extract the entire available heat therefrom.

10. All parts readily accessible for cleaning and repairs. This is a point of the greatest importance as regards safety and economy.

11. Proportioned for the work to be done, and capable of working at its full rated capacity with the highest economy.

12. The very best gauges, safety valves and other fixtures.—*Industrial Record.*

A published statement of investigations made in Ohio is authority for the fact, as ascertained, that the weight of 100 cubic feet of natural gas is 4.287 pounds. It is composed of 1.072 pounds of hydrogen and 3.215 pounds of carbon, and requires for its perfect combustion 969 3-10 cubic feet of air, weighing 74.561 pounds. It makes in burning 9.648 pounds of steam and 11.788 pounds of carbonic acid—equal to 100—and produces 94.593 heat units when the steam is not condensed ; the total products of combustion being, therefore, steam, 9.648 ; carbonic acid, 11.788 ; nitrogen, 57.412, or a total of 78.848 pounds. It is stated that if these products of combustion escape at a temperature of 600° they carry off with them 12,712 units of heat, or about 14 per cent. of all the heat produced by the fire, or if they escape at 300° they carry off less than 7 per cent. If, however, for any reason twice as much air as is necessary to combustion passes through the fire and escapes up the chimney along with these products of combustion, as is so often the case, there must then, at a temperature of 600°, be a loss of heat units equal to about 26 per cent. of all the heat produced by the fire.



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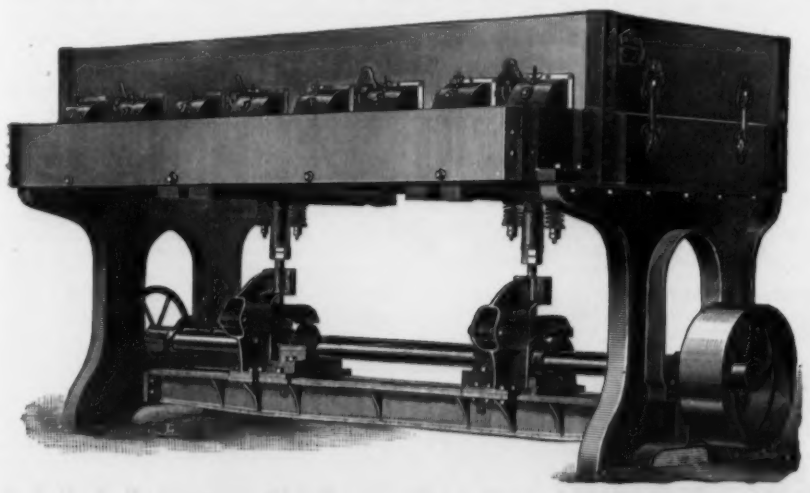

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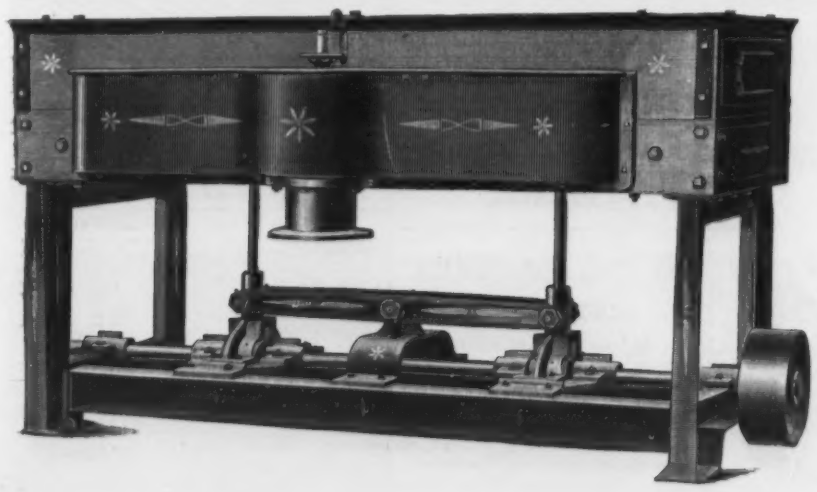

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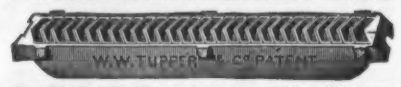

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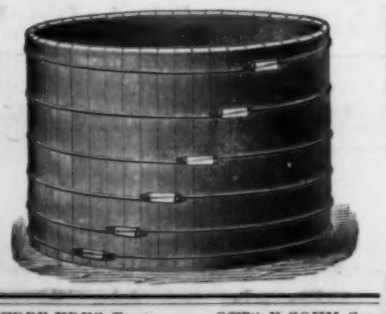

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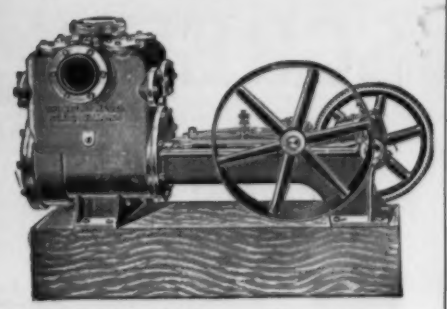

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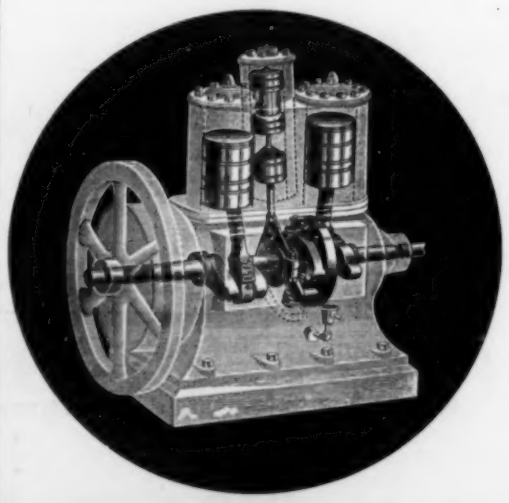

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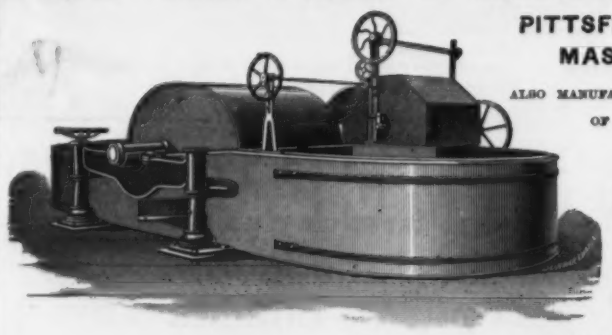

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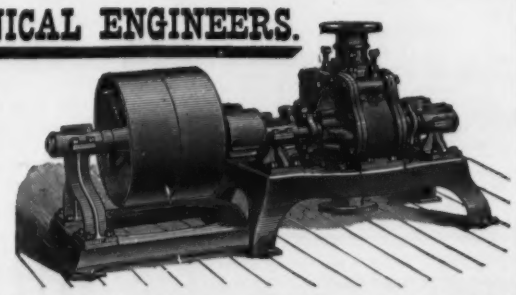

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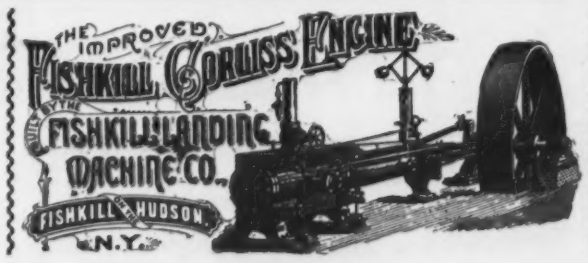

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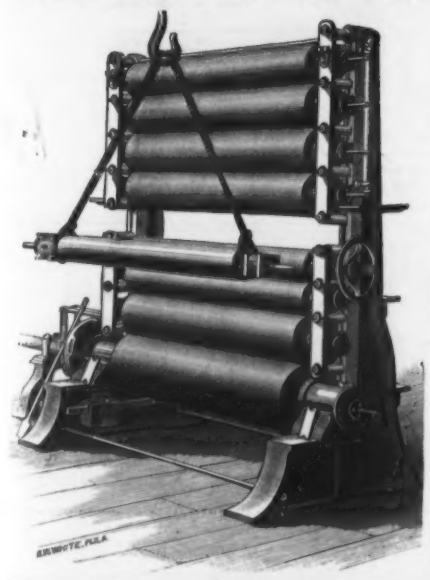

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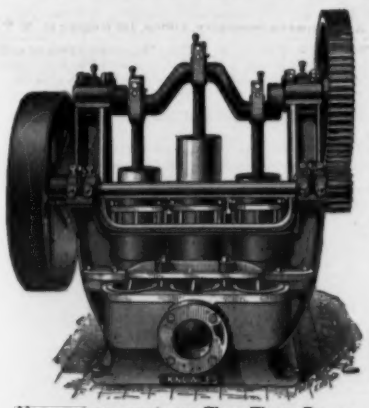

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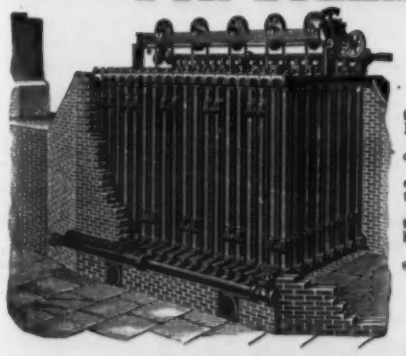

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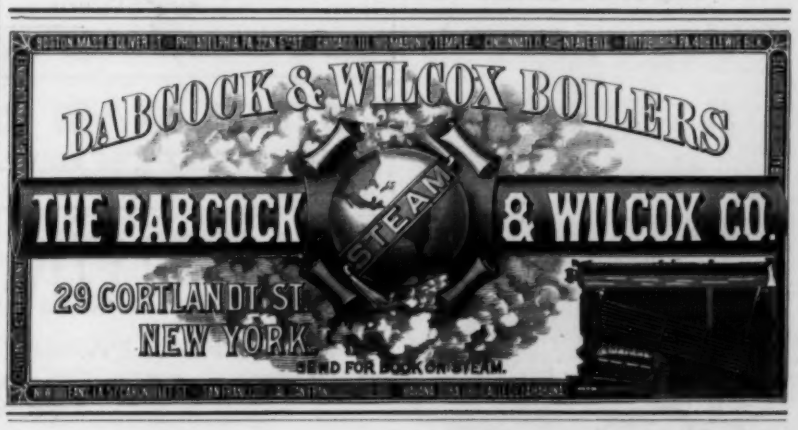

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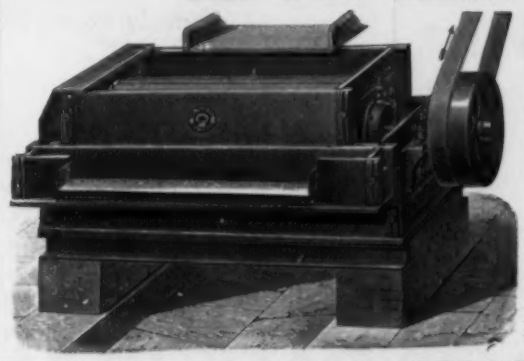

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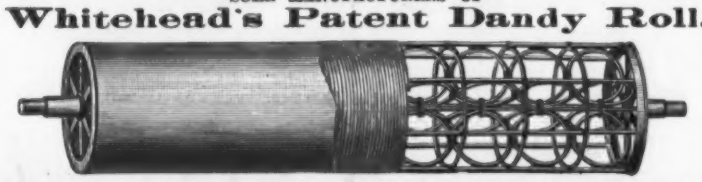

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